





Digitized by the Internet Archive  
in 2008 with funding from  
Microsoft Corporation















HALF-YEARLY ABSTRACT

OF THE

MEDICAL SCIENCES.

JANUARY—JUNE,

1847.

Vol. VI. will appear on the 1st of January, 1848.

Books, &c., for notice, to be sent as soon as published (carriage free) to Mr. CHURCHILL, Princes street, Soho, or to the Editor, Norwich.

American publications will be forwarded by the American publishers to London, provided the freight is paid to them in advance.



THE

# HALF-YEARLY ABSTRACT

OF THE

# MEDICAL SCIENCES:

BEING

A PRACTICAL AND ANALYTICAL DIGEST OF THE CONTENTS OF THE PRINCIPAL  
BRITISH AND CONTINENTAL MEDICAL WORKS PUBLISHED  
IN THE PRECEDING SIX MONTHS.

TOGETHER WITH

A SERIES OF CRITICAL REPORTS ON THE PROGRESS OF MEDICINE AND THE  
COLLATERAL SCIENCES DURING THE SAME PERIOD.

EDITED BY

W. H. RANKING, M.D., CANTAB.,

LATE PHYSICIAN TO THE SUFFOLK GENERAL HOSPITAL.

Apparatu nobis opus est, et rebus exquisitis undique et collectis, arcessitis, comportatis.—CICERO.

NO. V.

JANUARY—JUNE, 1847.

PHILADELPHIA:  
LINDSAY AND BLAKISTON.

1847.

297861  
13. 3. 34

HALF-YEARLY ABSTRACT

MEDICAL SCIENCES

A PERIODICAL AND ANALYTICAL SUMMARY OF THE PROGRESS OF THE MEDICAL  
SCIENCE AND CONTINENTAL MEDICAL WORK PUBLISHED  
IN THE ENGLISH AND SCOTCH

W. H. BARRING, M.D. GUYARD

JANUARY-JUNE, 1887

PHILADELPHIA:

T. K. AND P. G. COLLINS, PRINTERS.

52581  
8. 8. 87  
13.



## NOTICE TO CORRESPONDENTS.

---

*The Editor having changed his residence, requests that all communications be forwarded (free) either to MR. CHURCHILL, Princes street, Soho, London, or to himself, addressed DR. RANKING, Norwich.*

*The Editor is again compelled to remind his American correspondents that no parcels are taken in unless the entire charge is paid upon them.*

*Numerous Journals and other communications from America, with a charge varying from 10s. 6d. upwards, have been refused.*

*Many inquiries having been made, chiefly from Subscribers in remote country places, as to the best way of obtaining the "Half-yearly Abstract" regularly, it is suggested that an order for the supply of each Volume as it comes out, should be given to a local Bookseller, or to the Subscriber's London Druggist.*

# LIST OF BRITISH AND FOREIGN PERIODICALS REFERRED TO IN THE "HALF-YEARLY ABSTRACT."

## BRITISH.

*British and Foreign Medical Review.*  
*Medico-Chirurgical Review.*  
 " *Transactions.*  
*Transactions of the Provincial Medical Association.*  
*Edinburgh Medical and Surgical Journal.*  
*London and Edinburgh Monthly Journal.*  
*Dublin Quarterly Journal of the Medical Sciences.*  
*Lancet.*  
*Medical Gazette.*  
*Provincial Medical Journal.*  
*Medical Times.*  
*Dublin Medical Press.*  
*Bell's Pharmaceutical Journal.*  
*Guy's Hospital Reports.*  
*Chemical Gazette.*  
*Chemist.*

## AMERICAN.

*American Journal of the Medical Sciences.*  
 " *of Science and Art.*  
*Philadelphia Medical Examiner.*  
*New York Journal of Medicine.*  
*Boston Medical and Surgical Journal.*  
*Southern Medical and Surgical Journal.*  
*British American Journal of Medical Science.*

## FRENCH.

*Annales de Chirurgie.*  
 " *d'Hygiène.*  
 " *de Chimie et de Pharmacie.*  
 " *des Maladies de la Peau.*  
*Archives Générales de Médecine.*  
*Bulletin des Académies.*  
*Encyclographie Médicale.*  
 " *des Sciences Médicales.*  
*Journal des Connaissances Médico-Chirurgicales.*  
*Gazette des Hôpitaux.*  
 " *Médicale.*  
*Journal de Chirurgie de M. Malgaigne.*  
*Revue Médicale.*  
*Journal de Chimie Médicale.*  
*Journal de Chimie et de Pharmacie.*

## GERMAN.

*Schmidt's Jahrbücher.*  
*Zeitschrift für die Gesamte Medicin.*  
*Muller's Archiv für Anatomie, &c.*  
*Liebig's Annalen der Chemie und Pharmacie.*  
*Canstatt's Jahresbericht.*  
*Buchner's Repertorium.*  
*Haller's Archives für Physiolog. and Patholog. Chemie.*  
*Casper's Wochenschrift.*  
*Poggendorf's Annalen.*

N. B.—Every periodical here specified is consulted *directly* by the Editor and his coadjutors.

# CONTENTS.

## PART I.—PRACTICAL MEDICINE, PATHOLOGY, AND THERAPEUTICS.

### SECT. I.—*Zymotic Diseases.*

ART.	PAGE
1. Remarks on Fever. By W. Davies, M. D.	17
2. Treatment of Fever by Cold Water. By J. H. Stallard, Esq.	18
3. Clinical Lecture on Erysipelas. By Dr. Basham	22

### SECT. II.—*Diseases of the Nervous System.*

4. Clinical Lecture on Delirium Tremens. By B. Phillips, Esq., F. R. S.	25
5. Natural History and Treatment of Delirium Tremens. By John Ware, M. D.	28
6. Diagnosis of Delirium Tremens and Arachnitis. By Dr. Bence Jones	32
7. Diagnosis of Cerebral Hemorrhage. By M. Rostan	33
8. On the Varieties of Headache. By Dr. Wright	33
9. Diagnosis of Neuralgia and Neuritis. By M. Chomel	34
10. On the Relations of Rheumatism and Chorea, and their Treatment. By Dr. Begbie	35

### SECT. III.—*Diseases of the Respiratory System.*

11. Treatment of Pleurisy. By Dr. Swett	36
12. Treatment of Chronic Bronchitis and Bronchial Asthma. By Dr. Theophilus Thompson	38
13. On Latent Pneumonia. By Dr. Saucerotte	39
14. Physical Signs of Incipient Phthisis. By M. Dubini	40
15. Treatment of Epistaxis by Insufflations of Alum. By M. Lecluyse	ib.

### SECT. IV.—*Diseases of the Circulatory System.*

16. On the Venous Bruit. By Dr. Sylvester	40
17. On the Treatment of Angina Pectoris. By Dr. Latham	41
18. On Tubercular Pericarditis. By Dr. Burrows	42

### SECT. V.—*Diseases of the Digestive System.*

19. On Semeiology of the Tongue. By Dr. Wright	44
20. Chlorate of Potassa in Salivation	45
21. New Remedy in Salivation	ib.
22. Treatment of Dyspeptic Headache. By Dr. Child	ib.
23. Treatment of Colica Pictorum. By Dr. Dick	47
24. On Insidious Inflammation and Ulceration of the Bowels. By Dr. Basham	48
25. Iodine Liniment in Bowel Complaints	50
26. Treatment of Hemorrhage of the Bowels in Fever, by a combination of Senna and Matico	ib.
27. Bismuth in Diarrhœa	ib.
28. The Urine in Ascites	ib.

### SECT. VI.—*Diseases of Uncertain or Variable Seat.*

29. Treatment of Diabetes. By Dr. Chambers	51
30. Diagnosis of Scrofulous Disease. By Dr. Willshire	ib.

SECT. VII.—*Diseases of the Skin.*

ART.	PAGE
31. On the Syphilitic Diseases of the Skin. By Dr. Porter . . . . .	51
32. Treatment of Syphilitic Eruptions of the Skin. By M. Cazenave . . . . .	61
33, 34. Prevention of Pitting in Smallpox . . . . .	65
35. Variola, Vaccinia, Varioloid, and Varicella, their Analogies . . . . .	67
36. Effects of Hydriodate of Potassa in removing the Stains of Nitrate of Silver from the Skin . . . . .	ib.
37. Pathology of Urticaria. By Dr. McLagan . . . . .	ib.

SECT. VIII.—*Varia.*

38. On the Diseases arising from the Injurious Action of Mercury. By Dr. Porter . .	68
39. On the Use of Opium in Inflammation. By Drs. Ranking and Durrant . . . . .	73
40. On the Diseases arising from the Immoderate Use of Tobacco. By Dr. Laycock .	76
41. Successful Method of arresting Bleeding from Leech-bites . . . . .	77

## PART II.—SURGERY.

SECT. I.—*Symptomatology and Diagnosis of Surgical Diseases.*

42. Diagnosis of Fracture about an inch and a half above the Carpal Extremity of the Radius. By Dr. Colles . . . . .	78
43. Diagnosis of Ovarian Hernia . . . . .	ib.
44. Diagnosis of Hernia and Varicocele . . . . .	ib.
45. Psoriasis . . . . .	79
46. Diagnosis and Treatment of Rupture of the Tendon of the Triceps Cruralis Muscle. By John Grantham, F. R. C. S. . . . .	ib.
47. Diagnosis of Luxation and Fracture of the Head of the Humerus. By M. Dupuytren . . . . .	ib.
48. Diagnosis of Hernia of the Foramen Ovale. By Dr. Roeser . . . . .	80

SECT. II.—*Nature and Causes of Surgical Diseases.*

49. Abscess in the Neck, communicating with the Arch of the Aorta. By George Busk, Esq. . . . .	81
50. Fracture of the Superior Cervical Vertebra. By Drs. Copland and Spangenheim .	83
51. Fracture of the Surgical Neck of the Humerus. By M. Debrout . . . . .	84
52. Fracture of the Upper Extremity of the Humerus traversing the Bicipital Groove, and detaching the greater Tubercle. By Robert Smith, Esq. . . . .	ib.
53. Partial Dislocation of the Humerus and of the Femur. By M. Dupuytren . . . . .	85
54. Spontaneous Dislocation of the Hip-joint.—Reduction . . . . .	ib.
55. New variety of Dislocation of the Humerus. By Dr. Roser . . . . .	86
56. Foreign Body in the Sublingual Region . . . . .	87
57. Rupture of the Posterior Tibial Artery from Phlebitis after Amputation. By Mr. Micklethwait . . . . .	ib.
58. Muscular Hernia . . . . .	88
59. Excerpta from a Lecture on Syphilis. By Dr. Porter . . . . .	89
60. Case of Spontaneous Gangrene of the Lower Extremities, &c. By H. Fuller, Esq., M. B. . . . .	92
61. Erectile Tumour of the Head of the Tibia; Ligature of the Femoral Artery; Death . . . . .	93

SECT. III.—*Treatment of Surgical Diseases.*

62. Removal of Bone for Neuralgia. By Dr. Dixon . . . . .	94
63. Excision of the Elbow-joint in a case of Caries of the Articular Extremities of the Bone. By Dr. Buck . . . . .	95
64. Treatment of Distortion of the Spine not connected with Caries. By Sir B. Brodie . . . . .	97
65. New Modes of Amputating the Penis . . . . .	98
66. New and Successful Mode of Treating Prolapsus Ani. By Dr. Hake . . . . .	99
67. Hypertrophy of the Septum Nasi successfully treated. By M. Brulet . . . . .	100
68. Strangulated Congenital Hernia in an Infant seventeen days old. By Mr. Ferguson . . . . .	101

ART.	PAGE
69. On the Division of the Tendo Achillis. By Professor Stromeyer . . . . .	102
70. Case in which Heat was employed to Coagulate the Blood in an Aneurismal Sac. By Dr. Bellingham . . . . .	ib.
71. On Exostoses and their Treatment. By Prof. Roux . . . . .	103
72. History of a case of Spina Bifida successfully treated. By C. Hawthorn, Esq. . . . .	105
73. Extraction of a Needle from the Urethra by a new Method. By Dr. Raynaud . . . . .	106
74. Amputation at the Shoulder-joint for Axillary Aneurism. By Professor Syme . . . . .	107
75. Successful Extirpation of a Polypous Tumour of the Larynx. By Professor Ehrmann . . . . .	109
76. Closure of several Varices by Electro-Puncture. By Dr. Malani . . . . .	110
77. Reduction of Dislocations of the Humerus and Femur. By Professor Syme . . . . .	111
78. New and Successful Operation for the Cure of False Joint. By Professor Dieffenbach . . . . .	ib.
79. Cure of Prolapsus Ani without Operation. By Dr. Jaesche . . . . .	112
80. Treatment of Fissure of the Anus without Operation. By M. Diday . . . . .	113
81. Removal of Loose Cartilages from the Joints. By Robert Liston, F. R. S. . . . .	ib.
82. Rhino-plastic Operation to supply the Left Ala Nasi. By Prof. Dieffenbach . . . . .	114
83. Contraction of the Œsophagus cured by temporary Dilatation . . . . .	115
84. Aneurism by Anastomosis in the Anterior Naris, cured by the Actual Cautery. By Dr. Wilmot . . . . .	ib.
85. Wounds and Injuries of the Abdomen.—General Conclusions. By G. J. Guthrie, F. R. S. . . . .	116
86. Treatment of Lateral Depression of the Walls of the Chest. By Professor Dupuytren . . . . .	118
87. Secondary Prostatic Calculus, removed by Perineal Incision. By Herbert Barker, Esq. . . . .	119
88. Spina Bifida.—Cure by Operation. By W. B. Page, Esq. . . . .	122

#### SECT. IV.—*Rare Surgical Cases.*

89. Complicated Plastic Operations for Deformity of the Face. By Professor Dieffenbach . . . . .	124
90. Removal of a Portion of the Brain for Cancer. By M. Samson . . . . .	126

### PART III.—MIDWIFERY AND DISEASES OF WOMEN AND CHILDREN.

#### SECT. I.—*Midwifery and Diseases of Women.*

91. Observations on Dysmenorrhœa. By Dr. Oldham . . . . .	127
92. On the Treatment of Chlorosis. By Sir Henry Marsh, Bart. . . . .	130
93. Chenopodium Otidum in Amenorrhœa . . . . .	131
94. Observations on Uterine Catarrh. By Dr. Evory Kennedy . . . . .	ib.
95. Treatment of Leucorrhœa by Uterine Injections. By Dr. Mitchell . . . . .	132
96. New Pelvimeter . . . . .	133
97. Practical Observations on some Congestive, Inflammatory, and Ulcerative Affections of the Uterus. By Dr. Evory Kennedy . . . . .	ib.
98. On Excision of the Cervix Uteri for Carcinomatous Disease. By Prof. Simpson . . . . .	136
99. On Inversion of the Uterus. By John Green Crosse, Esq. . . . .	137
100. Treatment of Uterine Tumours. By Safford Lee, Esq. . . . .	141
101. New and Easy Method of applying a Ligature to Uterine Polypi. By W. S. Oke, M. D. . . . .	143
102. On Inflammatory Ulceration of the Uterine Neck during Pregnancy. By Dr. Bennett . . . . .	144
103. Salivation from Cauterization of the Cervix Uteri with Acid Nitrate of Mercury . . . . .	145
104. Treatment of Placenta Prævia. By Dr. Radford . . . . .	ib.
105. On the Means by which Uterine Hemorrhage is suppressed without Artificial Assistance. By Dr. Radford . . . . .	146
106. Treatment of After-pains. By Dr. Cattell . . . . .	151
107. Case of Separation of the Pelvic Bones during Labour . . . . .	152

#### SECT. II.—*Diseases of Children.*

108. Pathology and Treatment of Croup. By Mr. Hird . . . . .	153
109. Alum in Pertussis. By Dr. Davies . . . . .	154
110. Treatment of Eneuresis. By Dr. Chambers . . . . .	ib.
111. On Polypi of the Rectum in Infants. By M. Guersent . . . . .	155



## REPORTS.

	PAGE
Report on the Progress of Practical Medicine, Pathology, and Therapeutics. By the Editor . . . . .	159
Report on the Progress of Surgery. By H. Ancell, Esq., Lecturer on Medical Jurisprudence, &c. . . . .	186
Venereal Diseases . . . . .	218
Aural Surgery . . . . .	230
Report on the Progress of Midwifery and Diseases of Women and Children. By the Editor. . . . .	241
Report on the Progress of Pathological Chemistry. By George Day, M. D., Cantab., &c. . . . .	262
Report on the Progress of Forensic Medicine and Toxicology. By Professor Guy, M. D., Cantab., &c. . . . .	292
Report on the Surgical and Medicinal Application of the Vapour of Ether. By the Editor . . . . .	327
<hr/>	
Books received . . . . .	349
Index . . . . .	350

# ABSTRACT OF THE MEDICAL SCIENCES,

8c. 8c.

---

## PART I.

### PRACTICAL MEDICINE, PATHOLOGY AND THERAPEUTICS.

---

#### SECTION I. ZYMOTIC DISEASES.

ART. 1.—*Remarks on Fever.* By W. DAVIES, M. D., Physician to the Bath United Hospital.

(*Prov. Med. and Surg. Journ.*, Jan. 30, 1847.)

[THE aim of Dr. Davies is to establish two points: first, that fever is primarily a disease of the blood; and, secondly, that the principal danger in this country arises from the tendency to cerebral complication. In support of the first allegation, he assumes the following propositions: 1, that the disease is communicable; 2, that in order for a disease to be communicated, it is essential that a certain matter shall pass off from the body of the person affected, and be received into the body of the one who is to suffer. These being granted, together with the fact that the period of greatest communicability is precisely that at which the system is engaged in freeing itself of the poisonous matter, he considers that it is tolerably conclusive that in fever the blood is primarily affected. In reference to the second point, he observes, that the head-symptoms are the effect of this poisoned blood circulating in the brain, the evidence of which is to be found both during the progress of the disease and after death. He thus continues:]

1st. In the progress of the disease, we find that the head-symptoms, during the early period of the attack, are confined to frontal headache and giddiness, with more or less of intolerance of light and sound; and as the disease advances, these conditions pass into great restlessness and sleeplessness, with active delirium, or it may be great torpor and drowsiness, with a wandering and confused state of mind when roused: and either of these forms may pass gradually into coma and death, or, under more fortunate circumstances, into convalescence and recovery. All this would seem to mark the increasing influence of the poison on the blood, and through the blood, on the cerebral functions; and when this influence terminates short of death, we have another law of the action of poisons brought into play—namely, that after a time they lose their power over that particular system, and are discharged therefrom, leaving the individual in a fair way of recovery. Hence the wisdom of Cullen's statement, that the proper object of treatment is "to obviate the tendency to death;" well knowing that if the patient can be kept alive, and free from serious local lesion, for a sufficient time, the system will shake off the load of poison by which it is oppressed.

2d. In the morbid anatomy of the brain in fatal cases of fever, ample proof has been obtained that there is no necessary connection whatever between the symptoms presented during life, and the morbid appearances discovered after death. I have examined the head in several cases, and one since I have been physician

- to the United Hospital, in this town, when death has taken place by way of coma supervening on the continued fever, without being able to discover any cerebral lesion at all proportionate to the symptoms, not anything more decided than slight sub-arachnoid effusion, and perhaps a drachm of fluid in the lateral ventricles. Dr. Alison, M. Andral, and Dr. Graves, have placed on record abundant evidence of the inability of morbid anatomy to explain the cause of head-symptoms in continued fever. The following case in point is from Dr. Graves's "Clinical Medicine." He says, "He was a young man of robust habit and apparently good constitution, and labored under the ordinary form of maculated typhus. Shortly after his admission he was attacked with delirium, which was soon after followed by coma and death. Now, suppose you were called to see a patient, not labouring under typhus, but exhibiting a similar train of symptoms,—that is to say, violent delirium, accompanied by flushing of the face, suffusion of the eyes, headache, and a tendency to get out of bed,—in fact, a state of furious excitement, requiring the restraint of the strait waistcoat, what idea would you be likely to form of the condition of the brain? If a patient of this kind had no typhoid symptoms, you would certainly say that he was labouring under meningitis or cerebritis; and if the case proves fatal, you would naturally expect to find lesions of the brain fully sufficient to account for all his symptoms. And you would in all probability find extensive thickening of the membranes of the brain, with subarachnoid effusion, or you would discover softening, increased vascularity, and supuration of the encephalic mass. But here, a man in fever exhibits all the symptoms of cerebral inflammation: the cerebral affection runs on to a fatal termination with great rapidity: he dies comatose. And what do we find on dissection? Doubtful signs of congestion, and no distinct evidence of inflammation; a slight opacity of the arachnoid at the base of the brain, and about a teaspoonful of clear subarachnoid effusion." He then says, "This seems to prove that in the production of cerebral symptoms in typhus, some cause not to be recognized by the production of cerebral lesions, or in other words, something besides mere congestion or inflammation exists." And this brings us back to our starting-point—namely, that this "something," which is neither inflammation nor congestion, is the effect of the poison of fever on the blood, rendering that fluid unfit for the support of the healthy functions of the brain.

ART. 2.—*Treatment of Fever by Cold Water.* By J. H. STALLARD, Esq., Leicester.

(*British and Foreign Med. Review*, Jan. 1847.)

[Although no advocates of the so-called "Cold Water System," in its reckless and charlatanic application, we are, nevertheless, most unwilling that a practice long since employed by honourable members of our profession, and based upon logical principles, should be excluded from the list of our therapeutic agencies, simply because a few unprincipled men have chosen to constitute it the arena of their fraudulent intermeddlings with human health and life. We gladly, therefore, avail ourselves of this opportunity of placing before our readers a series of cases, in all which, excepting the last, the safety and efficacy of treating fever by the external application of cold water is very clearly exhibited. The fever thus treated was the ordinary typhoid fever of this country, with a tendency to enteric and pneumonic complication. The mode of applying the cold water was as follows:

The patient was stripped naked and enveloped in a cold wet sheet and covered with blankets, in which he was kept for 10 or 15 minutes. He was then wrapped in a blanket thoroughly heated before the fire, and carefully covered up with the bedclothes. The first effect of this treatment was the production of a sensation of cold with sighing, but this unpleasant state was quickly succeeded by an agreeable feeling of coolness and comfort. After removal to bed, the patient breaks out into a perspiration, the headache and muscular pains cease, and he generally obtains a refreshing sleep. The cases referred to are subjoined.]

CASE. I. Coleman, Henry, æt. 10, admitted October 5th, from a close and most unhealthy yard. He complained of rigors; skin very hot and dry; bowels quite

open; slight cough. He was ordered simple febrifuge mixture with low, simple diet.

October 6th. The skin very hot and dry; the tongue red and very foul; bowels open; he complains of slight cough and headache. There is no apparent congestion of the lungs.

He was ordered to be surrounded with a cold wet sheet, to be placed in a blanket, and to remain in it for ten minutes.

*Vespere.* About half an hour after the cold application he broke out in a profuse perspiration, which continued during the whole day. He appears much better this evening, is more lively, and his head is relieved; still slight cough. Contin. med.

7th. Tongue cleaner, moist; bowels open; complains of headache. His nose has bled during the night. Cough as before. Slight crepitation observed at the base of the left lung, but he has perspired freely through the whole night.

To have cold water applied to the head, and to continue the fever mixture.

8th. Much better; crepitation gone; no recurrence of fever. Ordered to get up.

9th. There was a slight recurrence of fever last night, and he was again placed in the wet sheet; perspiration was induced, and it continued during the whole night. His tongue clean, and bowels regular; cough gone. To have rice pudding, and omit medicine.

10th. Continues improving. To have beef-tea. 11th. Discharged cured.

CASE II. Tomlinson, Spring, æt. 26, admitted October 2d. consequently had been ill a week when I first saw him on Oct. 9th. He had been taking simple fever mixture, and had had diarrhœa and pneumonia. His tongue was dry and foul; bowels still purged; cough; mucous râles were heard over both sides of the chest, at the back part; pulse very feeble, upwards of 100; skin had never been moist since his admission, and is now remarkably harsh and dry. Ordered the wet sheet to be applied as above, and to have 1½ oz. of port wine every four hours, with a little beef-tea. No medicine.

10th. Much relieved. Shortly after the removal of the wet sheet he broke out into a most profuse perspiration, which has not yet entirely gone off. Tongue is now clean and moist; his bowels have been open twice. He had no beef-tea yesterday, from an error of the nurse, but it was again ordered.

11th. Skin is quite wet; his cough is gone; his tongue is much improved; and his bowels have been costive since yesterday's visit. To have ol. ricini ʒss.

12th. Better. Bowels opened by the oil; he coughs occasionally; but a thick whitish phlegm is easily expectorated. To have meat diet [too soon?]

13th. Tongue dry; bowels open twice; no thirst; his skin is quite moist; and otherwise he is much better. To omit meat, and recur to beef-tea.

14th. Tongue is to-day clean and moist.

He continued to improve, and was discharged on the 16th.

CASE III. Thomas Harris, æt. 14, admitted October 3d. He had been ill seven days previous to his admission, but had so far improved that he was ordered to get up on the 7th. On the 8th I found him with a foul tongue, very red at the tip and margin; bowels open once in twelve hours; great thirst; aching of limbs, back, and head; a frequent pulse; and his skin very hot and dry. He was ordered the wet sheet and no medicine:

9th. He perspired freely after the cold application, and the perspiration continued all night, but had entirely ceased at the time of my visit, 9 A. M. The tongue is still very foul and red. To have the wet sheet again this evening.

10th. Skin is now quite wet with perspiration, which has been the case ever since the cold application; the tongue is not improved; the bowels are costive; the pulse is much more feeble; and he complains of weakness, but neither of fever nor headache. To have ol. ricini ʒss; to be repeated in four hours if necessary. The cold application to be repeated if the fever should return.

11th. Better. Bowels open; tongue cleaner. The skin preserved its moisture all day yesterday, so that the wet sheet was not employed; but as the skin is now hotter and drier than at my visit yesterday, it was ordered to be used to-day. The pulse is more feeble, and he was ordered half a pint of beef-tea in the twenty-four hours.

12th. Very much improved. The tongue is clean; the bowels are open; perspi-



raite occurred after the cold sheet, and has continued ever since; the skin is now quite cool; he complains of weakness.

13th. Better; and he was ordered meat diet.

The convalescence was at once established, and he was discharged on the 15th.

CASE IV. Joseph Timson, æt. 23, married, admitted October 8th. He had been seized with shivering on the 4th, and had had an attack every day since. He complained of muscular prostration, pain of head, limbs, and back, great thirst, and loss of appetite; his tongue was foul; his skin hot and dry; and his bowels costive. He was ordered the wet sheet immediately.

9th. Almost well. He perspired freely after the application of the cold sheet, and the perspiration still continues. His pain of head and limbs is gone; the tongue is foul, and his bowels are costive, which makes him feel uneasy. To have ol. ricini  $\mathfrak{z}\text{ij}$ , and wet sheet if necessary.

10th. Perspiration has continued. The skin is quite cool and moist; the tongue is much cleaner; and the bowels are quite open. He was ordered meat diet, and to get up.

11th. Skin still continues moist. He feels much better; his tongue is not quite so clean; and his bowels have not been moved since yesterday. Repeat ol. ricini.

12th. Same as yesterday. Bowels still costive. Repeat ol. ricini.

13th. Feels quite well; his appetite is good; he has no return of shivering or fever; his bowels are freely open; and he wishes to go home. Discharged.

CASE V. John Foreman, æt. 16, admitted October 5th; but the wet sheet was not applied until the 8th. His state was little better than when he was admitted; his bowels were purged; his skin was very hot and dry; and his tongue very foul.

9th. He is greatly relieved, having perspired freely ever since the application. He was ordered to have it repeated if the fever should return.

10th. Much the same as yesterday. The sheet was not again applied.

11th. Much the same. There was a return of fever last night, and his skin is not very moist, and rather hot. The wet sheet was administered.

12th. Has perspired freely all night; his tongue is clean; bowels open. Ordered to get up; to have rice pudding.

13th. Says he feels quite well. His discharge was delayed until the 15th.

CASE VI. Foreman, Mary Ann, sister of the above, æt. 20, single, was attacked with shivering fourteen days back, but continued her work until the 14th of October. She was admitted on the 16th, late in the evening.

17th. Had a shivering fit after her admission last night, and when reaction came on she had the cold sheet applied as in the former cases. I found she had perspired freely all night, but her skin, though still moist, was very hot; her tongue was foul and red; her bowels open. She complained of great prostration and headache. She was ordered the liq. ammon. acet. and camphor mixture every four hours, low diet, and the wet sheet at night.

18th. She has been in a comfortable perspiration all night. The tongue is much improved; bowels are costive; headache much relieved. Cont. med.; omit the sheet.

19th. Bowels still costive, but tongue nevertheless cleaner. She has perspired freely, and her skin is now cool and moist. Omit medicine. To take ol. ricini  $\mathfrak{z}\text{ss}$ .

20th. Convalescent. Her discharge was delayed two days, on account of her peculiar work.

CASE VII. Thomas Kean, æt. 19, admitted October 9th, from a dirty yard, where fever has been very severe. Had been seized with shivering on the 7th, and when seen was in a high state of fever, and was specially noted as promising to be a very bad case. I sent him immediately to the fever house, with orders to place him in the wet sheet immediately. This was done for ten minutes, and about twenty minutes after the sheet was removed he began to perspire.

10th. Relief is very marked. He has had a good night, and his head and back-aches are gone, whilst his skin continues quite wet with perspiration; his bowels are costive. To have low diet, and ol. ricini  $\mathfrak{z}\text{ss}$ .

11th. His skin became hotter last night, and his pain and thirst slightly returned,



and the wet sheet was therefore repeated. He is not much better. His tongue is clean, though red; bowels have been relieved four times. He was to get up, and have rice pudding.

12th. Bowels costive. Complained of headache towards the afternoon. Ordered to have the sheet if necessary, and *ol. ricini* ℥ss directly.

13th. Tongue less red; bowels open. Did not require the sheet; headache relieved.

14th. Better. He was discharged cured the following day.

CASE VIII. Jane Smith, æt. 42, mother of six children, was admitted October 11th. She had been seized with shivering fourteen days before her admission, and had felt chills ever since. She was taken much worse on the 9th, so as to be unable to attend to her family. Her bowels were very costive, and on the morning of the 9th she took salts and senna, which have acted very violently. She now complains of intense headache, and aching of the back and limbs, with thirst and great prostration. She was ordered the wet sheet and low diet; no medicine.

12th. Perspiration came on after the cold application, and has continued all night most profusely. The headache and lumbar pain are quite gone, and she complains only of slight weakness. To have meat diet, but to remain in the fever house.

13th. No return of shivering or fever. Her skin is moist, and tongue clean: feels very feeble, but is anxious to go out, as she thinks she can attend to her family. Discharged.

CASE IX. T. Cooper, æt. 30, living in a dirty, ill-ventilated house, was seized with shivering on the 9th of October, and has been unable to do anything since, the shivering having occurred every day, accompanied with the usual symptoms of the epidemic. When admitted on the 12th, he complained more especially of thirst, sore throat, and back-ache. His tongue was foul: his skin hot and dry; and his bowels reported open. Ordered to have the wet sheet.

13th. Has been in a good perspiration all night. Tongue is much cleaner: his bowels are costive. Altogether he feels much better, but he still complains of his throat. The fauces were red and swollen. Ordered *ol. ricini* ℥vj, and a mustard sinapism to the throat.

14th. Bowels not well relieved; skin cool and moist; tongue cleaner. To repeat the *ol. ricini*.

15th. Much better. Bowels freely open; no headache. To have meat diet.

18th. Discharged cured.

CASE X. Elizabeth Holmes, æt. 12, had been confined to bed a fortnight, admitted on the evening of October 16th, and first seen on the morning of the 17th. She had had a very restless night, and had moaned frequently. She was quite sensible, and complained of no pain. Her tongue is dry, brown, and cracked; the skin hot, very harsh, and dry. She has had frequent sickness, which is always removed by the exhibition of the medicine which she had been taking under the direction of her previous medical attendant. Bowels have been moved three times since her admission; there is no pain or tympanitis; pulse very feeble: the second stroke of the heart very indistinct; no cough or congestion of the lungs. To take potass. bicarb. gr. vj, ex aquâ 4tis horis; to have wine and beef-tea, and to have the wet sheet in the evening.

18th. She perspired after the cold application, and the perspiration continued until 1 A. M. to day; after this she was very restless, and crying. Bowels are open; tongue same as yesterday; sickness ceased after the exhibition of the medicine; urine, moderate in quantity, high-colored, clear; Cont. Mist. To have morphia acet. gr.  $\frac{1}{4}$  omni hora. Diet as before. The sheet not to be repeated.

19th. She slept a little after the draught, but again became very restless. About 1 A. M. dyspnœa came on, which increased until 11 A. M., when she died. I saw her about 8 A. M., when the powers were failing, and the lungs were much congested. No post-mortem examination was allowed.

ART. 3.—*Clinical Lecture on Erysipelas.* By Dr. BASHAM.

(Prov. Med. and Surg. Journal, Nov. 25, 1846.)

[The lecturer availed himself of the occurrence of three cases of erysipelas in the wards of the Westminster Hospital, to make the following general and practical observations on the nature and treatment of this disease.]

In the course of your clinical observations in this hospital, you will have occasional opportunities of witnessing the peculiar features of two kinds of erysipelas, differing only in their cause, the idiopathic and the traumatic. Under these two divisions some authors have comprehended the several species of this exanthematous disease. The first comprises all those varieties of erysipelas that arise from constitutional causes; the second, as its name implies, all those arising from external injury. One class you will see treated in the physician's hands, the other in the surgeon's; but, nevertheless, you will find that whether the case be surgical or medical, idiopathic or traumatic, the treatment, being based on broad, general, and acknowledged therapeutical principles, will, in each class of cases, be for the most part the same. It is only when such cases fall into the hands of those who are unable to grasp the catenation of phenomena, successively developing themselves as a series of correlative effects, that we witness a departure from general rules of treatment, and the patient placed in jeopardy by a feeble practice, and inert and inapplicable remedies. Different writers have classified the various forms of erysipelas into several species; thus we find them speaking of the simple, the erratic, the phlegmonous, the œdematous, the gangrenous. But these terms do not imply different species of erysipelas, but for the most part merely express the relative intensity of the same disease in different individuals. The simple often passes into the erratic, and thence into the œdematous, and the phlegmonous is not only oftentimes œdematous, but not unfrequently ultimately terminates in the gangrenous. These terms are, moreover, confusing to the student; for by them he is led to the notion of distinct varieties, instead of different degrees of the same disease. The term erratic only expresses one of the universal characters of erysipelas, and not the specific distinction of a separate form; it is true that in some individuals the tendency to migratory extension is greater than in others, but this condition does not, therefore, separate its identity from the others. Again, œdema is to a greater or less degree an invariable accompaniment of every form of erysipelatous inflammation, and results from serous infiltration of the subjacent cellular tissue, consequent on the intense inflammation of the true skin. The extent of this œdema varies in different cases, but this is not sufficient to constitute a distinct variety.

The most practical subdivision is into idiopathic and traumatic; the first having reference to erysipelas as arising from constitutional causes only; the second as dependent exclusively on external injury. Each of these classes may recognize certain terms expressive of relative intensity, as the simple, with or without vesication, with more or less œdematous infiltration, and consequent tumidity and termination in desquamation of the cuticle and resolution; or the phlegmonous, where the inflammatory condition is more intense, and with an obvious tendency to *purulent* infiltration in the subjacent tissues. A few degrees of greater intensity, and this form rapidly passes into the gangrenous. The cases which you have had under your observation during the last fortnight belong to the class of simple idiopathic erysipelas, with the ordinary amount of œdematous infiltration, a local tendency to the formation of pus, and accompanied from the first with the usual symptomatic fever of the asthenic or adynamic kind. Practically, it is of some importance that you should have had the opportunity of witnessing and comparing together these cases of idiopathic erysipelas, attacking individuals differing in age, constitution, and habits of life. You have had the opportunity of testing the truth and reality of the doctrine so prominently laid down by some writers, that age and habits of life are powerfully modifying circumstances—that special respect must be paid to them; but here are three cases of erysipelas, two occurring in young women, the one of a spare and youthful aspect, the other more robust and inclined to obesity; and a man, the father of one of the females, of a strong, vigorous constitution, in each of whom the type of the symptoms has been similar,

notwithstanding this disparity in constitutional habits, and whose cases have each required the same modified antiphlogistic, I may almost say stimulating and tonic, mode of treatment.

Erysipelatous inflammation presents us with a series of phenomena expressive of true specific inflammatory action; the incipient symptoms, the *rubor*, *calor*, *tumor* and *dolor* declare this; and the subsequent effects, vesication, desquamation, purulent infiltration, or even gangrene, make up the expressive category. In idiopathic erysipelas the symptomatic or accompanying fever is by no means always proportioned to the extent of surface over which the inflammation spreads, although in all probability it is allied to, and dependent on, the intensity of the inflammatory action. The febrile symptoms in Case 2 were equally urgent as those in Case 1; yet in the latter the erysipelatous inflammation not only occupied the entire face and scalp, but migrated in front as far as the clavicles, and posteriorly had, unperceived, crept down between the scapulæ. In Case 3 the erysipelas, at first confined to the right cheek, only partially affected the left side of the face, and never passed farther than the sinuiput upwards; yet the febrile symptoms were most urgent in this case.

Whether the constitutional disturbance stands to the local cuticular inflammation in the relation of effect and cause, that is, whether the fever be produced by the specific inflammation in the skin, or *vice versa*, is a vexed question which need not occupy our attention now; for I do not wish to distract your attention from the legitimate objects of clinical observation, by a reference to matters purely controversial and speculative. We will simply consider these cases as they present themselves to us, exhibiting conditions of specific inflammation of the skin, with a large amount of symptomatic fever, rapidly assuming the asthenic or typhoid character.

I wish, first, to direct your attention to the local treatment; we will subsequently consider the constitutional. Among external remedies calculated to impart relief to the distressing sensations suffered by the patient, from the burning heat and tense state of the cuticle, none more certainly attain the object than hot fomentations. Hot and moist applications would seem to act mechanically on the distended cuticle, softening and relaxing it, and relieving it of that tension which causes the sensation of tightness and pricking shooting pain. Water of any temperature would effect this object; yet, for the most part, hot appliances are preferred. No rule need be laid down upon this point, for the feelings of the patient are the best guide to our selection of hot fomentations or cold lotions. In the majority of cases hot applications are preferred, the patient expressing an instinctive horror of cold. In some a decided preference is manifested for cold. The best method of applying the hot fomentations is to wring a large soft flannel out of hot water, and roll the head in it, bringing it round over the face, so that no impediment be presented to the breath, but at the same time the whole erysipelatous surface is invested in this hot moist atmosphere. Much relief is obtained to the painful sensations of the patient by these means. Of cold applications, linen or lint, dipped into cold spring water, and frequently renewed, is the simplest and best lotion. An evaporating lotion may be made by the addition of spirits, but this is not necessary. With respect to the use of ice and ice-cold water, judgment is required, for the vital energies of the skin in erysipelatous inflammation are reduced so low that a temperature of 32° continued for any length of time would effectually deprive the part of its vitality, and quickly bring on gangrene. The best practical rule in reference to the use of ice in erysipelas is to limit its application to the scalp, which, being defended more or less by hair, is not so susceptible to the influence of a low temperature, and to confine its use to the cases in which phrenitic symptoms of much urgency co-exist; for here the meninges of the brain become secondarily affected, and violent paroxysms of raving, wild, uncontrollable delirium declare the amount of cerebral derangement. The symptoms in such cases are much mitigated by applying ice to the scalp, or laying the head for a short time in a kind of ice pillow, made by introducing pounded ice, with a little water, into a large-sized bladder, and laying the head on it. The cases, however, now under consideration, present you with examples of the relief obtained by hot fomentations.

The nitrate of silver has been used freely to the erysipelatous surface in each



of these cases, and with the effect of cutting short the inflammation, by setting up an action different from, and incompatible with, the specific action of erysipelas. That it does cut short the inflammatory condition of the skin is proved by the absence of vesication when it is applied in time, the cuticle subsequently merely desquamating. That the action of the nitrate of silver on the skin is incompatible with erysipelatous inflammation is also testified by the fact that the disease will not extend itself beyond a line marked out by the lunar caustic. Advantage is taken of this fact to prevent the erysipelas extending, by surrounding the inflamed parts with a cauterized line of demarcation. The second case illustrates this fact. Two days after admission the erysipelas exhibited a tendency to extend downwards below the chin, and had reached to within half an inch of the clavicle of the left side. The healthy skin was freely cauterized by the nitrate about a quarter of an inch beyond the line of inflammation; the shoulders and neck posteriorly were in like manner marked off, but the hollow space between the scapulæ had escaped the touch of the nitrate, and the next day upon examining the patient the progress of the erysipelas had been confined within the boundary line, except that spot which had inadvertently escaped the action of the caustic; there the inflammation had crept along, being checked right and left by the caustic line, but proceeded downwards in the direction of the spine, through the passage left for it by the interruption of the continuity of the cauterized barrier. It was remarkable to witness the erysipelatous inflammation, like a burning torrent, holding on its course unimpeded through this narrow outlet, till again damped and extinguished by the effectual quenching of the nitrate.

There are some cases, however, in which it is less advisable to use the nitrate, than to depend upon free incisions made with a lancet, scoring the skin in parallel lines, and sufficiently to abstract blood freely for the relief of the fulness and distension. This course is especially necessary when the appearance of the skin indicates a more intense degree of inflammation of a more palpable phlegmonous character, and certain, if not by this means relieved, to terminate in suppuration and purulent infiltration in the subjacent cellular tissue. This practice may appear severe, but it is not so; it quickly affords relief, and saves much subsequent pain and trouble.

In cases of idiopathic erysipelas, particularly of the face and scalp, purulent infiltration is rare, and confined to those spots where the cellular tissue is lax, such as in the palpebræ, either above or below, and it never exists to the extent that is witnessed in traumatic erysipelas. When matter is likely to form in the spots just indicated, it may be suspected when the cuticle remains of a dusky-red hue, and tumid, after the surrounding parts are desquamating, and have lost the previous redness and œdema; the part has an elastic, almost boggy feeling, to the finger. This little abscess should be at once opened by a free incision, and its contents thoroughly emptied, and a pledget of lint laid on with moderate pressure; this causes the sides to unite, and prevents the refilling of the sac with pus, which it is certain to do if pressure be not made. If this be not done, the edges of the opening may be kept open for twenty-four or thirty-six hours, for it is only by one or the other of these means that a second opening can be prevented. The cases of both the father and the daughter exhibit the peculiarity of these purulent collections. The situation of the minute abscess in the outer canthus of the eye, imbedded in the loose cellular structures of the lower lid, was singular.

The constitutional or internal treatment of these cases partook of the modified antiphlogistic character. Cases of erysipelas in the metropolis will rarely bear depleting remedies, or severe antiphlogistic treatment; general blood-letting is totally out of the question. Mercurial alteratives, with occasional brisk purgatives in the earlier periods of disease, carefully supporting the system, if necessary, by wine or ammonia, is a general summary of the internal remedies required.

The chylopoietic viscera are always irregular in function and secretion, and require the agency of mercurial purgatives; these unload the bowels, relieve the biliary congestion, and improve the aspect of the dejections. Brisk saline purgatives, co-operating with the mercurials, so that they be not pushed too far, are of great utility. Colchicum, in combination with a neutral salt and magnesia, is in my experience the best form of cathartic. The action of colchicum is developed principally on the duodenum; it stimulates the hepatic ducts, cleanses this portion

of the intestines of mucoid accumulations, modifies the accompanying fever, diminishes the heat of skin, relieves the local turgescence, and furnishes other indications of amelioration. Two or three good purgative actions are generally sufficient, for hypercatharsis must be carefully avoided. The form in which I usually prescribe colchicum is the haustus colchici compositus of our Hospital Pharmacopœia. Vin. colchici, dr. ss.; solut. magn. sulph., dr. iij.; magnesiae carb., gr. xx.; aqua menthæ pip., oz. j. M. Fiat haustus.

Two or more doses of this saline readily obtain the desired effect. Case 1 illustrates the good effects of purging with the colchicum draughts. On the 18th the bowels were torpid, evacuations offensive and dark, the tongue red and dry; two of the above draughts induced free action from the bowels, the tongue became moist, and there was a general diminution of all the febrile symptoms, and the local heat and tension were much mitigated.

The type of the fever in the majority of metropolitan cases is unquestionably of an asthenic order, ammonia and other stimuli becoming necessary oftentimes in the early stages of the disease. With respect to the proper period at which stimuli should be administered, it is difficult, I may say impossible, to lay down any special rules applicable to all cases: each case presents its own peculiarities and indications on which the necessity for wine must depend. In rural districts among a hardy and robust population, general depletory measures, and an antiphlogistic treatment throughout may be advisable, but in the metropolitan districts the febrile symptoms early indicate want of power, and the necessity for support and stimuli.

Opium exercises a most beneficial influence wherever irritability, restlessness, and delirium are the concomitants of fever. You have seen in the progress of these cases how serviceable it has proved in allaying the delirium, restlessness, and vigilance so common in the fever of erysipelas. The pulvis ipecacuanhæ comp. is, in most cases, the best form in which opium can be given, from its developing a secondary influence over the skin. Opium does not act merely as an hypnotic, or as an agent only to procure sleep; it lessens the irritability of the system generally, husband the physical power, and gains time for remedies to operate, and the functions to be restored to their normal state. It has been already observed that diffusible and vinous stimuli are important and essential remedies, so soon as the pulse and tongue indicate the approach of a typhoid condition. Ammonia is best given as the sesqui-carbonate in the mistura ammoniæ acetatis, or effervescing draught, formed by twenty grains of the sesqui-carbonate with two teaspoonfuls of lemon-juice. The tongue becoming moist, the skin cool, and the pulse lowering in frequency, express a remission of the adynamic state. Of vinous stimuli it is hardly necessary to specify any particular kind; port wine or brandy are those most usually employed.

The convalescent stage of this affection differs in but little from similar periods of other fevers. Cinchona bark-tea, with a mineral acid, forms the cheapest and most effective tonic, prepared by pouring a pint of boiling water on an ounce of the bruised lance-leaved bark, the water being first acidulated with three drachms of the dilute sulphuric acid. It differs from the infusum cinchonæ of the Pharmacopœia only in the maceration with acidulated water, the object of which is to render the *kinate* of cinchonine more readily soluble. You will find this tonic economical, and quite as efficacious in the convalescent periods of most acute diseases as the more expensive preparation of quinine.

## SECT. II.—DISEASES OF THE NERVOUS SYSTEM.

### ART. 4. *Clinical Observations on Delirium Tremens.*

By B. PHILLIPS, F. R. S.

(*Medical Gazette*, Nov. 13, 1846.)

This kind of delirium often commences with slight incoherence or unreasonable excitement. In some cases urgent symptoms are suddenly manifested, and from that moment there may be no order, no consequence, no justice in the ideas, the



conversation, or in the actions: there is constant confusion, continued transposition of names, ideas, and things; there is no rest by day or by night; sometimes a single idea is fixed on the mind, at other times it is ever changing; but in either case it usually relates to the tastes, or habits, or passions of the patient. There is constant motion, sometimes moderate, at other times violent. In some cases constant chattering, and (according to the character of the patient and the intensity of the delirium), menaces, and vociferations. There may be flushed cheeks, straining eyes, and profuse perspiration, especially at the upper part of the body; or any of these symptoms may be absent.

A very curious and a very constant character in this condition is an utter oblivion of the state which preceded it; so that if the ribs be fractured the patient may sing or vociferate; if a limb be fractured he may move it about, or even walk upon it; if an operation have been performed he may employ himself in tearing off the dressing, or in breaking open the wound.

Any of these signs I have mentioned may be observed, but there is much variety in their combination. In all cases there is well marked delirium; but in most instances the attention may be so fixed for a moment that a rational answer may be obtained to a question proposed. There is almost always a remarkable agitation of the muscular system, considerable cutaneous exhalation, especially over the upper part of the body, and a pulse commonly bearing no correspondence with the apparent gravity of the other symptoms, though it is often frequent. In some cases the delirium is violent, in others quiet. In some instances the patient is always chattering, in others silent. In some cases the patient cannot be kept in bed without force, in others there is no desire to get up. In their attempts to get up, patients are frequently unconscious that they are prevented from doing so by a strait-waistcoat or other restraint; they seem to think some heavy burden prevents their getting up. With all the agitation which may be present the face is often of its natural colour. In some cases the eyes are very brilliant, in others they are very haggard and constantly rolling about. The constant action of the masseters often gives a curious expression to the face; the constant crying out soon dries the mouth; the saliva becomes very viscid, and frequent attempts are made to eject it.

Now let us see, if we can, what gives occasion to the development of these very formidable symptoms.

In the practice of a surgeon they usually occur after wounds or injuries, whether caused by accident or by surgical operation; but the disease does not necessarily follow any particular kind of wound, nor is it confined to any particular period of inflammation, suppuration, or even cicatrization; it may, however, without wounds or even without inflammation, and therefore it can have no direct dependence on either. It may follow suddenly the abstraction of blood in the treatment of a disease, even when the quantity is not large; it may be excited by any other exhausting influence.

Now, although it may be true that this disease is most commonly observed in persons who have habitually indulged in the use of exciting fluids, and that the particular condition of the brain may therefore be fairly supposed to result from that stimulation, yet the other fact is also unquestionable, that an exactly similar train of symptoms may be observed in persons who have not indulged in the use of intoxicating liquors at all. We must, therefore, I apprehend, come to the conclusion that this state of brain can be determined by more than one class of causes, though there can be no doubt that habitual intemperance is the ordinary precursor of the disease. It is this fact, that similar symptoms to those of drunkards' delirium may be observed in persons whose habits have been strictly temperate, that has induced the question, What is the real influence of intoxicating fluids in the development of the disease?—are the symptoms commonly a consequence of the action of such fluids on the nervous system, or are they the consequence of prolonged excited vascular action, produced by other causes? It is believed by some persons that mere contact of alcoholic emanations may induce the condition of the system favourable to the development of the disease; and cases are mentioned where workmen employed in close places, bottling or otherwise, have been thus affected, even when they have been strictly temperate; but all such cases must be regarded with great suspicion. At the same time there is no reason to doubt that the

system may in this way become impregnated. In a person employed in a turpentine distillery, and breathing that atmosphere, we find the urine presenting the characteristic violet odour. Still the fact remains, that the overwhelming proportion of those who suffer from delirium tremens have largely used intoxicating fluids. How they act upon the system is the question in doubt. It is said, for instance, that prolonged stimulation maintains excited vascular action in the brain; and that, when that increased action is suddenly interrupted, a state of atony follows; and that this is a state of things which exists in simple delirium tremens; and that when the activity of the cerebral circulation is fully restored, the symptoms are dissipated.

It is said, that in the *true* delirium tremens the brain and its membranes present the same appearances as in a state of health. Of my own personal experience I cannot affirm or deny the correctness of this statement, for I have never been present at the examination of any person who died under those circumstances. In the cases I have had the opportunity of examining after death, whether the complications were much or little, the arachnoid has been opaque, or the vessels of the membranes, or the substance of the brain, have been more than usually gorged with blood, or there was slight effusion; and therefore it may be said that they were not true delirium tremens, which is the result of the disordered functions only.

It has been a question with some persons whether the brain in these cases be usually affected in any other way than by sympathy—whether the main derangement be not in the stomach; and the practice of Klapp has been held to support that doctrine. He conceived that there was always clear evidence of stomach derangement some time before the mental disorder occurred; and he conceived further, that when the mental disorder existed, it was often terminated by vomiting. Following up this impression he exhibited tartar emetic in large doses; and he states that the sleep which is often procured by opium follows as certainly the exhaustion of vomiting, and that the patient awakes convalescent.

If these results were constant they might be regarded as a reasonable proof that the delirium was often symptomatic of a disordered state of the alimentary canal, but it is not so. In my experience vomiting has not usually preceded the delirium, and when it has occurred after it, it has not seemed to exercise any curative influence over the disease; and you certainly will see patients who have been bled and blistered, purged and antimonialized, without being cured of their delirium, which has afterwards yielded to opium; but in those cases where more than one organ is destroyed, it may be that delirium tremens is not the most urgent symptom; and we may be obliged to bleed or employ some other active treatment, although we believe that the delirium may for the moment be aggravated by it.

It may now be expected that I should enable you to say whether a case before you be delirium tremens or not. It may be the delirium of fever, of inflammation of the brain, or of insanity. How are you to distinguish between them? The fact that the disease has succeeded to intoxication would not allow us justly in calling it delirium tremens. It is not enough to say that the differences are mainly in degree, though it is certain that between delirium tremens and phrenitis there is usually a well marked distinction in the state of them, in that of the skin, and in the tremor. The circumstances of the case will usually enable us to determine whether it be the delirium of fever or not; and the hurried manner, the loquacity, the constant desire to be moving, of delirium tremens, will help us still farther. From maniacal insanity the disease is usually distinguished by the softness of the pulse, the clammy and profuse perspiration, and the unceasing tremor. These circumstances, together with the history of the case, will usually leave us little doubt as to the nature of the disease.

In the treatment of this very formidable derangement of the nervous system a very broad rule of practice has been commonly laid down—the exhibition of opium and cathartics; and it has been said further, that, under whatever form opium is administered, it is equally efficacious, that it should be usually given in large doses until sleep is procured, and that the nervous agitation will soon disappear. You have seen us follow that plan in the cases now in the hospital, and with the most complete success; and it is for this purpose of putting you on your guard against the universal applicability of the remedy that I have thought it

desirable to offer you some observations upon the subject to-day. Every case of delirium tremens is not to be cured with opium, or we should have nearly 250 deaths annually from this cause alone; neither would Klapp have advocated the exclusive virtues of tartar emetic, nor others that of blood-letting or cathartics.

It is then that simple uncomplicated nervous delirium—the disease which so commonly supervenes in a person accustomed to over-stimulation, but in whom forced abstinence has become necessary, in consequence of violent injury or other cause—the delirium which is often preceded by muscular debility and sleeplessness, by weight and pain of the head, but which at other times is manifested in full activity without any precursory symptoms, and in which, whether mild or furious, the patient is usually able to recognize those around him, able to answer questions correctly, but in which the attention cannot be sustained, the patient immediately relapsing into his former condition, and in some cases characterized by immovable silence, in others by inexhaustible loquacity, and which may exist without complication of disease of the brain or the stomach—that will almost always yield to opium properly administered, in some cases by the stomach, in some by the rectum; but even in these cases its effects will usually be much more decided if associated with some stimulus. Thus, if a man has been accustomed to drink largely of malt liquor, a drachm of laudanum will act much more beneficially if taken in a pint or pot of beer, than if taken alone. A similar remark may be applied to other spirituous liquors; and in other cases its effects would be most certainly enhanced if it were, as soon as practicable, associated with animal food.

But all cases of delirium tremens, are not thus simple. To the delirium is added disorder of some important organ—the brain or the stomach, for instance—and opium is no longer an unfailing remedy. In such cases it is that other plans of treatment to which we have alluded, may be employed most beneficially, and in which a rigid routine use of opium may be most objectionable, however proper it may be where delirium is uncomplicated. If a patient's face be flushed, if his head be painful, his pulse hard and full, the light offensive to his eyes, and the noise to his ears, we shall then suspect that the brain is disordered beyond the point where delirium is manifested, and means appropriated to that condition must be employed; it will, in all probability, not yield to opium. In such a case it may be proper to associate with opium blood-letting, blistering, mercury, or tartar emetic. Again, if the tongue be deeply coated, and the bowels obstinately costive, the tartar emetic plan would seem to be indicated.

Under ordinary circumstances, where no obvious complication exists, it is well, first, to get complete evacuations of the stomach, and intestines; then the action of opium will be more decided. You should begin with a full dose, according to circumstances, two, three, four, or five grains of opium, associated or not with camphor or other stimulant; to be followed by one and a half or two grains every second hour, until a long sleep is procured. From this sleep the patient will often awake almost if not altogether convalescent. In other cases, although the improvement is considerable, the affection is not wholly subdued, and it is unsafe to omit the opium, but it may be given in diminished doses, associated with food and stimulating fluid, until all delirium ceases; but under any circumstances it is well to resort to animal food and stimuli as soon as possible.

ART. 5.—*The Natural History and Treatment of Delirium Tremens.* By JOHN WARE, M. D.

(*British and Foreign Med. Review*, April, 1847.)

[The following paper forms one of a series of communications, in the course of publication in the above talented Review, with the object of advancing the limits of our knowledge respecting the Natural History of disease, as the only foundation upon which we can rear a superstructure of a just therapeutical practice. In reference to the essay in question, the editor remarks:—

“Delirium tremens is one of those acute diseases, the natural progress—in other words, the Natural History of which is generally complicated and obscured, or at least rendered doubtful, by the effects of the treatment most commonly had recourse to in this country, viz., that by opium. It has been, therefore, thought a



matter of practical importance to give an account of this very interesting and often dangerous malady, as it shows itself uninfluenced by treatment. The admirable Memoir from which the following extracts are taken, was published in Boston, in the year 1831; and the reader will find the principal data on which its conclusions are founded, in our Number for January, 1839, p. 268. We are by no means prepared to assert that opium is, in no case, beneficial in delirium tremens; or that it will not sometimes procure sleep when this would not ensue spontaneously; but we are certain, from personal experience, that the opiate treatment has often failed, that it has been occasionally very injurious, and that the sleep which ushered in restoration has frequently, at least, been the mere concomitant or sequent of medicine, and not its effect. At any rate, it is an essential element in the philosophical knowledge of the pathology and treatment of every disease, to be aware of its natural course, progress, and result.”]

Although delirium tremens occurs in various states of the constitution, and in various diseases, and is to be looked upon as a possible event in almost all cases of indisposition among drunkards, yet there is a remarkable similarity in the phenomena presented by the affection, and in the course of symptoms through which it passes, whatever may have been the original state of constitution or disease from which it has proceeded. Its approach is often indicated by the existence of certain symptoms from the very commencement of indisposition. It is particularly likely to take place in those who have suffered from irritability of the stomach and frequent vomiting. Indeed, it often makes its appearance after having been preceded by no other symptom of disease, and comes on as soon as the vomiting ceases. There is commonly also in the beginning of those cases in which delirium finally ensues, a tremor of the hands and limbs, and more frequently of the tongue; a tremulousness of voice producing some indistinctness of articulation; a general anxiety; a hurried manner of moving and speaking; imperfect and disturbed sleep; and startings and twitchings of the limbs. These signs are by no means infallible. They are sometimes observed where delirium does not follow. But where they exist from the very first, are not diminished by the treatment adopted, and do not leave the patient with the other symptoms of his complaint, an attack of delirium tremens may be reasonably expected.

But, on the other hand, it frequently happens that the attack is not indicated by any such symptoms in the early history of the case. The patient appears to be getting on perfectly well, and the original disease to be subsiding in a satisfactory manner, when suddenly it becomes manifest that an attack of delirium tremens is threatened. In either case, however, whether there have been any premonitory symptoms or not, the disease follows very much the same course. The patient first complains that he has not slept well, that he has been disturbed all night by unpleasant dreams, that he has been hard at work, but that matters have not gone right, and his concerns have troubled and perplexed him. During the next day, perhaps, he is tolerably comfortable, has some appetite, moves about his house or place of business; yet he is uneasy and restless, and exhibits those appearances which have been already described as indicating the approach of the disease. This continues for one or two days; each night being worse than the preceding, whilst in the day there is an increase of the anxiety, restlessness, and trembling of the limbs, tongue, and voice.

The night is then passed with only one or two short naps, from which the patient awakes with some strong impression upon his mind, of the fallacy of which it is difficult or impossible to convince him. His sleep has been filled with dreams of dangers and perplexities and annoyances, innumerable and indescribable. From this state he passes into that of complete watchfulness and delirium. The dreams of his sleeping become the fancies of his waking hours; and in his delirium he conceives himself to be engaged in the same occupations, beset by the same difficulties, and surrounded by the same dangers, that he has described as giving a character to his dreams. In fact it is difficult in many cases to point out the precise time at which the mind passes from the dominion of the conceptions which have been engendered in sleep, to that of those which are the offspring purely of the disease.

At whatever period this state of entire watchfulness and delirium begins, we are

to date from it the commencement of what may be denominated a *paroxysm of delirium tremens*. Yet it will sometimes happen, that, on the morning succeeding the night, from the last continued sleep of which we are to date the commencement of the paroxysm, the patient does not exhibit any unequivocal marks of the delirium by which he is affected. The attendants inform us that he has had but little sleep, and has been very *crazy*, but we find him sufficiently rational to give an account of his feelings, and fully aware of whatever is going on about him. Still, his aspect and manner are such as to convey to the mind of one accustomed to the disease the true state of the case, even although there may be no actual exhibition of delirium during the period of the visit.

Most frequently, however, at this time there are occasional wanderings of mind, though not a continued state of delirium. Thus, while sitting by the patient, we perceive his eye become intently fixed upon some remote spot in the room, or outside a window, as if it had been suddenly caught by some remarkable object; or he will speak in a loud and quick voice, as if making answer to some one who has addressed him from without, or from behind; or he will start up hastily from his seat or from the bed, and run to another part of the room, or to look beneath the bed, as if in pursuit of something. These impressions are, during the early part of the day, evanescent: but in the latter part the delirium returns, and becomes constant. It increases in violence till about the middle of the night, and then diminishes towards the morning.

On the morning of the second day the delirium is still complete, and is not altered in its character: but the patient is milder and more tractable than during the night. He is as fully possessed of the strange imaginations which have entered into his mind; but he is more easily influenced by his friends, and is more amenable to authority. The second night is generally worse than the first, and there is less abatement of the disease in the ensuing or third morning, and in the early part of the day; still there is some alleviation of symptoms, like that of the day before. The third day is passed much in the same way as the second; but if the disease is to have a favourable termination, the delirium of the third night is less violent than that of the preceding, and the paroxysm terminates in sleep, sometimes in the course of the evening or first part of the night, but most commonly not until the latter part of the night or in the morning. When the disease is about to terminate unfavourably, the delirium continues undiminished until the fatal event takes place.

This description has been taken from cases which were left to take their own course, uninfluenced by medicine. In all essential points it will apply to a majority of cases. Still there are many variations in the time of day at which the paroxysm begins and terminates, in its length, and in other particulars, which cannot be included under any general account. Thus its duration is sometimes less and sometimes greater than that assigned to it. Especially it is apt to be prolonged in those who have had repeated attacks, and in one such case I have known it to extend to nearly six entire days.

During the first part of his sleep the patient is generally uneasy and restless, his breathing is irregular, and is sometimes almost like that of a person dying. During the first few hours, he often wakes once or twice, perhaps gets up and renews the exercises of his delirious state, or else takes merely a little drink, but in either case, goes soon to sleep again.

Soon after getting into a sound sleep, the breathing becomes deep, slow, and sonorous: a profuse sweat breaks out, and for a long time the whole body is bathed with it. After six or eight hours the patient awakes tolerably rational, and sensible of what is going on about him, but generally with some impression left on his mind of the imaginary scenes through which he has passed. He continues for the next twenty-four or even forty-eight hours, to sleep during the greater part of the time. At the end of that period, his restoration appears complete, so far as the peculiar symptoms of delirium tremens are concerned; for he may still be the subject of other affections which have preceded the paroxysm, and which remain after it has subsided.

Almost invariably the occurrence of sleep at the close of the paroxysm is indicative of a favourable termination. In some rare cases, however, the patient



actually dies after falling asleep, particularly where sleep has been procured by opium; indeed the only cases which I have seen or known, in which the disease has terminated in this way, have been treated by large doses of opium. In such a case no peculiar symptoms indicate a different result from that which we usually promise ourselves when the patient falls asleep, till after sleep has taken place. But then, instead of gradually passing from a disturbed into a more tranquil and natural slumber, he becomes first more unquiet and restless, moans, breathes with difficulty, and falls at length into a state of complete coma, from which he never awakes.

The disease terminates fatally in several other ways. Sometimes the patient is carried off by the sudden accession of convulsions, and this event is particularly to be looked for in those cases which have begun with them. They also occur very unexpectedly in cases which promise favourably, and which have afforded no ground for anticipating them. Sometimes the patient, after continuing the violent exertions of his delirium to the very last moment, without any of the peculiar signs of approaching dissolution, falls back and expires immediately. Sometimes, during the continuance of the delirium, death comes on from the effects of some disease with which it happens to be complicated, and dissolution occurs in the same way that it would from that disease alone.

There has been much uniformity of opinion among physicians concerning the object to the accomplishment of which the treatment is to be directed during the paroxysm. This object is the procuring of sleep. The absence of sleep is one of the most remarkable symptoms of the disease. When it terminates favourably, it terminates in sleep. It is not without foundation, therefore, that the treatment has had for its primary indication to bring about this termination. The patient, it has been emphatically said, "*must sleep or die.*" There is no doubt that this is true. But may it not have been too hastily concluded from this undeniable position, that sleep must be procured by the assistance of art, or the patient will die? It is possible that the common impression which has been produced on our minds concerning this is erroneous in two points of view: 1, We have concluded that sleep is the cause of the salutary change which takes place in the disease; and 2, that sleep, in whatever way induced, will have the same effect, and that it is therefore to be induced by artificial means.

In order to determine, concerning any disease, what influence our remedies actually exert upon it, we must first ascertain what will be its course and termination if suffered to go through its usual series of changes without the interference of art. This is a point in the history of diseases to which reference should always be had in deciding upon the principles, or calculating the efficacy of the treatment to be employed. This is particularly desirable in those diseases which, like that now under consideration, have but recently become the subjects of medical observation and inquiry.

I have witnessed a considerable number of cases of delirium tremens, in which the patient, after the establishment of the paroxysm, has been left to contend with it, without the administration of any remedy whose tendency was to cut it short, or in any decided way to modify its symptoms. The active treatment has been confined to the period of indisposition preceding the paroxysm: and after its accession articles of a negative character alone were administered, with the exception sometimes of purgatives. The result has uniformly been, that the disease has gone through that regular course, which has been already described in the former part of this paper, and has terminated in the manner there described, at a period seldom less than sixty or more than seventy-two hours from the commencement of the paroxysm.

The termination in these cases has also been almost uniformly favourable, except where there has been a combination of the delirium with some acute disease in itself dangerous, or where it has appeared in connection with some fatal chronic malady. This course has been pursued, I do not mean to say without any deviation, but without any deviation which I believe to have essentially affected the result, in about fifty cases of the several classes which have been described: and although several deaths have taken place among them, none are recorded, except

among cases, which I have arranged, whether justly or not, in the third and fourth classes.\*

It may be stated, in confirmation of the opinion now expressed concerning the natural tendency of the paroxysm to terminate in a spontaneous and salutary sleep at the end of a certain period, that even in the reports of cases which have been submitted to the public as evidences of the efficacy of various modes of practice, sleep has not actually taken place sooner than it would have done in the natural course of the disease, if the history which has now been given of it be founded on correct observation. In the cases which I have formerly treated with opium, and which have at last terminated well, a salutary sleep has not actually taken place till toward the close of the third day, let the quantity of opium be what it would. I have indeed seen sleep induced by opium at an earlier period, but it was premature; it passed into a state of coma, and the patient died.

I am satisfied, therefore, that in cases of delirium tremens, the patient, so far as the paroxysm alone is concerned, should be left to the resources of his own system, particularly that no attempt should be made to force sleep by any of the remedies which are usually supposed to have that tendency; more particularly that this should not be attempted by the use of opium. I do not undertake to say that it can be never right to administer opium for the removal of the paroxysm itself, but I believe it can be rarely necessary, and I have not yet seen a case in which I think that it was.

ART. 6.—*Diagnosis of Delirium Tremens and Arachnitis.* [Dr. Bence Jones has made the proposition that some assistance might be afforded in the differential diagnosis of the above diseases by the condition of the phosphates in the urine in each; they being deficient in the former disease, in excess in the latter. In demonstration of the truth of his assertions he adduces three cases of each disease, the urinary analysis of which gave the following results:]

The first case of delirium tremens was that of a young woman, aged 32. On the sixth day of the acute attack, the total phosphatic salts = 1·07 per 1000; urine, specific gravity 10·28. She recovered.

The second case was that of a man aged 35. On the fourth day the total phosphatic salts = 2·40 per 1000; urine, specific gravity 10·19. On the fifth day the total phosphatic salts = ·15.

The third case of delirium tremens, that of a man aged 35, on the fifth day of the disease gave total phosphates = ·10; and in second experiment with the same urine ·9 per 1000; urine, specific gravity 1018·0. The sixth day he took his food, and the total phosphates = 6·10 per 1000; urine, specific gravity 1022·5. He rapidly improved, and left the hospital well.

The first case of inflammation of the brain, was that of a young man aged 28. On the

16th day, total phosphates	= 6·83 per 1000;	urine, sp. gr.	= 1025·3
17th do.	= 9·79	do.	= 1028·1
19th do.	= 8·43	do.	= 1024·8
20th do.	= 5·77	do.	= 1021·2
21st, morn. do.	= 4·25	do.	= 1016·9
21st, night do.	= 7·08	do.	= 1024·6
22d day of disease he died.			

There was lymph in the sub-arachnoid cellular tissue at the base of the brain. The ventricles were distended with fluid, the septum broken and flocculent, the fornix and corpus callosum not softer than natural.

The second case of inflammation of the brain, was that of a man aged 36, with much more acute symptoms than in the previous case.

\* Dr. Ware classes his cases as follows:

1. As the disease occurs as an immediate consequence of a particular excess or excesses in persons not otherwise disposed to disease.
2. As the result of habitual intemperance, without any particular or extraordinary excess.
3. As the disease occurs in connection with other regularly formed diseases or as the consequence of injuries, and still having the natural tendency to end in sleep.
4. An irregular form, of a recurrent or less permanent type, not ending in sleep, coming on in the course of other diseases.—*Ed. Brit. and For. Rev.*

12th day, total phosphates	= 13.15 per 1000; urine, sp. gr. = 1029.7
14th do.	= 12.11 do. = 1033.0
16th do.	= 9.53 do. = 1030.0
18th day of disease he died.	

The ventricles of the brain were much distended, the walls of both lateral ventricles much softened; fornix and septum lucidum different, softening of the lower part of anterior lobes on both sides, arachnoid membrane at the base opaque.

The third case was that of a man aged 36, with acute symptoms supervening on chronic disease.

21st day of severe symp- toms, total phosphates	} = 13.38 per 1000; urine, sp. gr. = 1031.1
23d, much relieved, ditto	= 6.03 do. = 1022.9
30th, improving rapidly, do.	= 2.79 do. = 1016.3

Five weeks after this he left the house in his ordinary state of health.

Such, then, is the contrast which delirium tremens and inflammation of the brain sometimes exhibit, as regards the amount of phosphates excreted.

*Reported in Lancet, Feb. 6, 1847.*

#### ART. 7.—On the Diagnosis of Cerebral Hemorrhage. By M. ROSTAN.

*(Gazette des Hôpitaux, Oct. 15, 1846.)*

[The occurrence of a fatal case of apoplexy in the clinical wards of M. Rostan, offered an occasion for the following remarks on the diagnosis of cerebral hemorrhage, and other lesions of the brain with which it may be confounded. The lecturer first gives a brief survey of the diseases which are known to produce a loss of consciousness, enumerating diseases of the heart, concussion of the brain, and diseases of that organ. Insensibility from the former, he observes, is at once recognized by absence of pulse; if, therefore, the pulse can be felt, we may feel assured that the patient is neither in a state of syncope nor asphyxiated. The seat of mischief is in the brain. But he adds:]

This point being established, we have attained but a small portion of the requisite knowledge. We know that the brain is the seat of disease. But what is the disease? If we discover that the patient has suddenly lost consciousness in the midst of his ordinary occupations, we shall, in general, be correct in the opinion that the case is not one of chronic disease. We have to do with an acute affection, and we may, therefore, at once exclude from our mind, all chronic cerebral diseases which produce insensibility. The acute diseases which are characterized by this symptom are, cerebral congestion, cerebral hemorrhage, meningo-encephalitis, and local or partial encephalitis. The differential diagnosis is thus established; in congestion of the brain, all the functions of the brain are abolished, and there is, momentarily at least, general paralysis. It is distinguished from cerebral hemorrhage by the fact, that the symptoms disappear after a short time, while cerebral hemorrhage, in quantity sufficient to produce the same train of symptoms, persists for a long time, and is usually fatal.

Meningitis and encephalitis are characterized by fever, and therefore, cannot be confounded with the preceding states. If, therefore, fever exists, we have only to distinguish between inflammation of the membranes and of the substance of the brain. If, in addition, there is partial paralysis, the probability is, that the case is one of partial encephalitis, the consequence of hemorrhage.

[It is not easy to distinguish between non-inflammatory ramollissement of the brain and cerebral hemorrhage, when paralysis has already taken place, and the previous history of the patient is unattainable. Rostan believes, that the former state is always preceded by precursory symptoms, such as pain at a fixed point, sensations of tingling and pricking, cramps, &c. If, therefore, an apoplectic patient has had such symptoms previous to his attack, it is probably a case of ramollissement. If, on the contrary, these have been absent, cerebral hemorrhage is the more probable.]

ART. 8.—On the Varieties of Headache. [The various circumstances under which headache may arise as a prominent symptom, are thus briefly explained by Dr. Wright in a series of clinical lectures.] To give you some general notion of them,



as we are yet dealing only in generalities.—suppose a patient comes to you complaining of headache. This is a very generic sort of term, and may involve a great variety of specialities, some serious, and others simple. One patient, we will say, is in his teens, or not far out of them, yet he looks older by many years than he ought to do. His face is blanched and parchment-like, cheeks sunken, eyes hollow, lustreless, and watery, and they never look fairly at you; the man is timid, nervous, shuns society, and has no inclination for active pursuits; he is subject to giddiness and forgetfulness, and has almost constantly a dull, heavy pain at the back of his head, perhaps extending down the spine, with a sense of weight and dragging of his legs. Here you have a nervous system enfeebled and shaken from causes you will easily learn if you pointedly inquire after the personal habits of the sufferer. Another complains of oppressive pain chiefly over his eyes, scarcely ever leaving him, but distressingly aggravated at different periods of the day. It is probable, that these periods are subsequent to meal times, and that then the headache is attended also with drowsiness. The man is dyspeptic. He will tell you that his bowels are confined, and that he is troubled with wind. Look at his tongue, and you will see that it is furred with, most likely, a brownish patch in the centre. Percuss the right hypochondrium, and you may find a greater extent of dullness, or more tenderness, than natural. The condition of the great viscera here is wrong. Liver, stomach, and bowels, are the sources of that frontal headache. Another patient has pain in the forehead, but it is acute and lancinating, and not persistent. Its periods of accession and departure are pretty regular. Ask the precise spot of the pain, and you will have indicated the exit of the supra-orbital nerve of either side, probably the left. Here you have a case of *tic douloureux*, which may have no obvious exciting cause, or may result from exposure to cold, from dyspepsia, from pregnancy, from uterine disease or disorder, &c. Another complains of aching all over his head, considerably increased by heat or cold, as the case may be. On further inquiry, you learn that the pain is chiefly superficial, and that to rub the patient's hair in different directions, sharply, is to agonize him. Here you have rheumatism of the cranial integuments. Look cautiously after this case. You may suddenly have a pain of a different kind, and deeper-seated, ushered in by screaming and shouting, followed by restlessness and delirium, with a glaring injected eye—the meninges of the brain will be suffering from metastatic rheumatism in its most active form. It was gout, thus transferred, that destroyed the valuable life of Dr. Ingleby, your late Professor of Midwifery. Another has acute pain darting through his temples and ears, especially when he gets warm in bed; at the same time, he has what he well describes as “gnawing pains” in his shin-bones; his nose is tender, and the roof of it painful; he has, or has had, sore throat, and there are copper-coloured patches about his body. This headache has its foundation in syphilis; mind your treatment, or the more delicate bones of the head and face may be sacrificed. I show you a characteristic specimen in illustration. See how the nasal and temporal bones have suffered here!

A delicate female complains of heavy throbbing pain over the middle, or at the back of the head. She has had it several months, more or less, and is liable to periodical exacerbations. The uterus has likely something to do with this pain. It may be a case of simple amenorrhœa; it may denote the climacteric period of female life; it may depend upon pregnancy; or the uterus may be undergoing some morbid change. This organ, however, may not be at fault; habitual constipation, which females are often in the habit of neglecting, may be the cause of the suffering, or it may be occasionally by hemorrhoids.

Such, and so many, nay, many more, are the varieties of pains in the head, having different causes, and requiring different forms of treatment.

*Medical Times*, Dec. 19, 1846.

ART. 9.—*Diagnosis of Neuralgia and Neuritis*.—Although in some cases the symptoms of these two affections of the nerve are so nearly similar, that it is difficult to distinguish at first sight the one from the other, the confusion will cease in general, if, instead of inquiring into the actual condition of the patient, our inquiries are directed to the prior history of the attack, its progress, and exciting cause. While, in fact, *neuralgia* is a very common affection, arising without appreciable cause, or from causes the most opposite in character, *neuritis* is a rare

affection, and is determined by causes which are readily appreciated. In analyzing the best authenticated cases of neuritis, it will be found that, with the exception of some few cases, in which it followed parturition, neuritis has almost constantly been produced by physical lesions of the nerve; such as wounds, punctures, contusions, ligature, compression by a tumor, &c. In fact, neuritis is always, or nearly always, the result of mechanical injury; while neuralgia originates spontaneously, and depends upon a particular and little understood condition of the economy. But if it is sometimes possible and useful to establish this distinction in practice, especially in neuralgia and neuritis of recent date, it cannot be denied that in a certain number of cases of chronic neuritis the distinction becomes impossible; for although it has been ascertained that neuralgia of very old standing (thirty or forty years, for example) may have preserved its original character throughout, and yet left no traces of disease after death, it happens in the majority of cases that under the influence of the repetition of the paroxysms, the texture of the nerve eventually becomes altered to such a degree as to render it quite impossible to decide whether the inflammation has been secondary, or has depended upon an original neuritis. These cases show the inutility of attempting a diagnosis in the chronic forms of the affections.

*Provincial Med. Journal, Jan. 30, 1847.*

ART. 10.—*On the Relations of Rheumatism and Chorea, and their Treatment.* By Dr. BEGBIE, F.R.S.E.

*(Monthly Journ. of Med. Science, April, 1847.)*

[The intimate connection which exists between rheumatism and pericarditis, and between the latter disease and chorea, has been rendered familiar by the writings of Bright, Babington, Copland, and others; but it has not perhaps been sufficiently demonstrated, although the association might be predicted to exist, that the abnormal choreal movements and the inflammation of the serous membrane were alike traceable to one and the same pathological condition, viz., that state of blood which characterizes the rheumatic diathesis. In the paper, of which we subjoin an abstract, this idea is strongly insisted upon. The author, after relating several interesting examples of the association of rheumatism and chorea in different members of the same family, criticises the explanation most in vogue respecting this coincidence, such as metastasis, extension of irritation to the spinal cord by the phrenic nerve, &c., offers in their stead the following sensible observations:—]

Keeping these facts in view, and calling to recollection the several cases which have been recorded elsewhere, I cannot help coming to the conclusion that the simple and true view of their relation is to be found in the morbid condition of the blood, which is admitted to exist in the rheumatic constitution; and the explanation will equally apply to chorea occurring in families or individuals inheriting the rheumatic diathesis, to chorea occurring in connection with rheumatism, but without the cardiac complication, and to chorea associated with pericarditis or endocarditis, or both: the inflammatory affections of the fibrous tissues, as well as the spasmodic affections of the muscles and tendons, originating in the same specific disorder of the circulating fluids . . . Those remarkable cerebral affections, the wild delirium and violent mania, the coma, the fatuity, which not unfrequently occur in the course of rheumatic fever, or follow in its train, and which have usually manifested themselves along with the cardiac complication, causing doubt and perplexity in the mind of the attendant as to the real organ affected, admit, I apprehend, of the same explanation—the altered nature of the blood circulating through the brain, and not, as has been supposed by Dr. Watson, the embarrassment of the circulation from obstruction of its central organ: for in some instances violent delirium has preceded the earliest symptoms of heart affection, and death in other cases has ensued on rheumatic attacks, accompanied by evidence of cardiac disease, but where the state of the brain was the chief cause of apprehension, and dissection has shown nothing more than a row of small, slender, bead-like warts on the mitral valve. Surely, in such cases, it would be well to look to the altered state of the blood, as the common cause of the rheumatic affections of the parts, the inflammation of the membranes of the heart, and the disorder of the nervous centres.



[The treatment of the two affections, acute rheumatism and chorea, are next pointed out in the following words:]

"Rheumatism, however, cannot be regarded as an active inflammation, and treated accordingly. It must be rather considered as a disease dependent upon a specific morbid condition of the blood exciting inflammatory action, particularly in the fibrous tissues, and new remedies ought to be applied, with the view of lessening the amount of circulating fluids and altering their constitution. For this purpose moderate blood-letting and calomel and opium appear to be the most appropriate treatment; and I have repeatedly observed, particularly in cases which did not call for immediate loss of blood, that after persevering in the use of mercury for some days, apparently without benefit, the abstraction of a small quantity of blood has been attended with immediate and permanent benefit. I have never seen the rheumatic inflammation of the joints translated to the heart in consequence of blood-letting, and cannot but fear that the prevalent notions regarding metastasis have led to serious errors in the treatment of the disease. If we bear in mind that a third of all those affected with acute rheumatism also suffer from inflammation of the heart, and that a large number also labour under inflammation of the pleura and lungs, and not a few under alarming disorder of the brain, we shall be desirous to employ all the means in our power to overcome as quickly as possible that condition of blood which, as long as it lasts, is productive of such serious consequences to vital organs. I have often been disappointed in colchicum, and doubt its efficacy in true fibrous rheumatism, though I have been more sensible of its effects in the synovial variety, that form which is known as rheumatic gout, and in which purging with full doses of calomel, aided by other purgatives, so as to produce copious bilious stools, is also found useful."

[Respecting the treatment of chorea, the author observes:]

"I have only to speak of the efficacy of one agent, having never had occasion to test the powers of any other; and it deserves remark that this remedy so available in chorea is scarcely less so in chronic rheumatism. Arsenic is a most valuable and powerful remedy in these as in other diseases, and it is much to be regretted that so many are deterred from employing it, in consequence of the sickness and other unpleasant symptoms which it is apt to produce. Dr. Babington has noticed arsenic as the most powerful of all the remedies for chorea, and Dr. Hughes (see Abstract, vol. iv., p. 28) regards it as slightly inferior to the other mineral tonics; but he only employed it in seven cases, in five of which it failed or disagreed. In the experience of thirty years, and in a large number of cases, I have never known it to fail. It has certainly disagreed in several instances, but I have not abandoned it on that account. Its use has been suspended for a few days, and resumed perhaps to be suspended again; but I have invariably found that the choreal movements have been more and more modified after each, till at last the disease has yielded entirely."

### SECT. III.—DISEASES OF THE RESPIRATORY SYSTEM.

#### ART. 11.—*Treatment of Pleurisy.* By Dr. J. A. SWETT.

(*Boston Med. and Surg. Journal*, Oct. 1846.)

Simple cases of acute pleurisy, if the attack be mild, yield readily to a mild antiphlogistic treatment, viz., one or two venesections, followed by cupping or bleeding, purgatives, and low diet, with rest. Under this treatment the constitutional fever is subdued, the pain relieved, and gradually the effusion is absorbed. Many judicious practitioners are in the habit of attempting to aid the absorption of the effusion by blisters and diuretics. I am disposed to think these remedies sometimes useful, but that in general they are of a very secondary importance. If pain continues to exist longer than usual—if the effusion is slow in disappearing, I should be disposed to blister the side and try and hasten the removal of the effusion by diuretics. The nitrate of potass, the hydriodate of potass, the diuretic decoctions, digitalis, any, indeed, of the well-known diuretics, may be used, and during their use I have sometimes seen the urine increased, and the absorption of the urine apparently hastened.

In severe cases we should resort to a still more active treatment, and as soon as the constitutional symptoms are somewhat abated by venesection and other means, we should resort to mercurials, and continue them more or less freely, according to the urgency of the case, and other circumstances, until the gums are touched. The influence of mercury in controlling serous inflammation, as well as the marvellous rapidity with which it promotes the absorption of coagulable lymph, when recent, appears to me one of the best established facts in therapeutics. Hence its value in a severe case of pleurisy, where we have not only to fear immediate danger from the violence of the disease, and the prospect of purulent formation, but the remote evil of a lung bound down and buried in lymph, the cause of extensive adhesions. I have observed, in cases where it is easy to watch the daily progress of the case, that no impression seemed to be produced upon the disease until the gums became affected, and that the absorption seemed to accompany at once the decline of inflammatory action. I do not know that there is any particular choice in the form of the mercurial preparation, but calomel gr. j. with opium gr. ʒ. or with Dover's powder gr. vj, given from twice to four times in the 24 hours, according to the urgency of the case, will be found as useful as any form.

When a case of pleurisy has gone on to suppuration, it is indicated by a continuance of the local symptoms and the supervention of hectic. When this change occurs, a corresponding change in the treatment becomes proper. The patient's strength should now be supported by nutritious diet, even quinine and wine may be necessary, and the greatest attention paid to the digestive organs, particularly to keep the appetite good, and guard against the occurrence of diarrhoea. If the patient has not been already mercurialized, and is strong enough to bear it, I should, in accordance with Dr. Hope's plan, which he found so successful, put the patient upon a mercurial course, at the same time carefully supporting the vital powers. Dr. Hope by this treatment cured thirty-five cases in succession. Some have been successful with the preparation of iodine. Dr. Stokes cured twenty cases of empyema by Lugol's solution of iodine, with the iodine ointment rubbed in externally. Both he and Hope used blisters also. Dr. Schonlein, of Berlin, is in the habit of trusting mainly to diuretics, especially to digitalis and nitre, and thinks he has seen the pus even carried off directly by the kidneys. The treatment I am in the habit of using in these cases is a combination of three different plans; I would give the proto-iodide of mercury with opium, and in conjunction with it the hydriodate of potass: at the same time using blisters dressed with the hydriodate ointment, or rubbed into the side. If the case was obstinate, and no diuretic effect was produced by the potass, I would resort to diuretics, at the same time supporting the strength by such diet and other means as the case might require.

Under any plan of treatment, however, I fear we shall frequently be foiled. The great thing is to prevent the formation of pus by appropriate treatment early in the disease; but if pus has once formed, it is not, I think, very readily removed by treatment. The question then arises, shall we resort to an operation and evacuate the pus, and if so, under what circumstance shall we resort to it?

Most authors on the subject are of opinion that the operation, like that for croup, should only be resorted to at the last extremity. I am disposed to doubt this position, both pathologically and practically. I have seen nine cases within the last few years where the pus was discharged externally: in six, by an operation; in three, spontaneously. In only one of these cases did death ensue, and this patient, I think, might have recovered had his circumstances afforded him a better chance. In another case I fear death will eventually ensue, because I think the lung itself is seriously diseased. I find I am supported in this statement by that of Heyfelder of Germany, who operated on six patients with complete success. I also agree entirely with this writer, that when the treatment employed has made us doubt whether the fluid will be absorbed, the operation is justifiable, and that then the sooner it is performed the better.

One of the principal reasons given for putting off the operation to a later period is this, that until fluctuation and pointing occur, you cannot be sure that pus is in the chest—you cannot be sure even then. I have felt and seen both, without a particle of fluid in the chest, in a case of cancerous tumour, imitating, in other respects, almost exactly, a purulent effusion. Again, as Laennec has perfectly shown, you may have a considerable collection of pus in the pleura, and the affected side, so far from presenting signs of fluctuation, is not even dilated, but, on the contrary,

contracted. So that in many cases, if you wait for fluctuation, your patient may die first from exhaustion. The truth is, that with a fair history of the case before us, and with the aid of the usual physical signs of pleuritic effusion, we can usually say whether fluid exists in the chest without fluctuation, although if this be present so much the better.

Again, some would discourage the operation for the reason that we cannot always feel certain that the effused fluid is pus. If it should so happen, it is said, that the effusion should be serous with coagulable lymph, a secondary inflammation would be excited, which would terminate fatally. Of the truth of this statement I can say nothing; I have never yet seen anything but pus evacuated, and as I have stated already, most of those cases recovered.

Now suppose the operation is decided, how shall we perform it? The usual place of opening the chest is laterally between the 5th and 6th ribs, but it may be made with advantage as low down as fluctuation can be felt. I have known it done even between the 10th and 11th ribs. The skin should be pushed up forcibly with the thumb of the left hand, so as to make the opening valvular, and an incision an inch or more in length, carried through the skin along the upper edge of the 6th rib. I would then recommend that an exploring needle should be passed into the chest in *all cases*. In the first place I can conceive no possible case where it would do harm, and it is attended with very little pain. If it discovers pus, then we can have no doubt as to the propriety of continuing the operation; if it gives indications of serum only, or if a solid tumour, then we can pause. In opening the pleural sac I think a double-edged scalpel, or an abscess lancet, better than a trochar, especially if it be a flat one. Great care should be taken that the edge, and especially the point of the instrument, be very sharp. I think I have known one, if not two cases, where the instrument, *from being dull, did not enter the cavity of the pleura at all*. The truth is, the pleural sac is usually lined by a thick and elastic false membrane, which can be separated from it easily without force. Now a dull instrument, especially a pushing one like a trochar, may pass through the pleura and push this loosely-attached membrane before it without even penetrating it, and of course without entering the cavity containing the pus. A very sharp instrument, giving it a cutting movement, might thus spare us the mortification of a case of dry tapping.

A question here arises, how much of the pus should be drawn off? I would let it run so long as no air entered the chest. But even if air gets admission, it does no harm, except in preventing the expansion of the lung; it does not excite inflammation, and is soon absorbed. A small tent of lint had better be introduced into the wound: for I have seen one case where the operation was remarkably successful in its first results, all the fluid having been at once removed, the opening being very low between the 10th and 11th ribs, and no air entering, so that the respiration could be soon heard all over the side. The opening, however, closed at once, and a new one was required higher up in the course of a week. Generally, however, where all the pus is not evacuated, I do not think the opening would close even without a tent. Simple loose dressings to receive the matter that may flow from the wound, a nutritious diet with tonics, and fresh air to support the strength, opiates to relieve irritation and procure sleep, are the indications of the after treatment.

ART. 12.—*On the Treatment of Chronic Bronchitis and Bronchial Asthma.* [Dr. Theophilus Thompson, after alluding to the great frequency of these affections, and their liability to be confounded with tubercular phthisis, makes the following observations on their treatment:]

"Antimony given alone is not altogether useless; but it is inadequate, and may be carried to such an extent as to injure the constitution, without permanently improving the condition of the tubes. Counter-irritation, although strongly recommended, produces only temporary advantage, and superadds to a trying malady a painful annoyance. Acids check expectoration, and often occasion tightness of chest. Opiates, so often given to allay the incidental cough, not unfrequently induce severe pleurodyne. The plan which Dr. Thompson first adopted, some years ago, he has, with certain modifications, very extensively employed at the Hospital for Consumption and Diseases of the Lungs, as well as in private practice, and the results have been so gratifying, as to make him anxious to commu-



nicate them. It consisted mainly in establishing on the bronchial tubes, gently, but rather rapidly, the influence of mercury. Calomel is undesirable, since if given freely it will frequently salivate, and its discontinuance be required before the bronchial condition is materially modified; but a single grain of blue pill, given thrice a day for a short period, and subsequently twice or even once daily, accomplishes the object often without producing soreness of the gums. Antimony proves a valuable auxiliary, and enables us to effect our purpose with a smaller quantity of mercury than would otherwise be requisite, and the addition of an anodyne is useful both in moderating the cough and making the stomach more tolerant of the treatment. The formula which Dr. Thompson is accustomed to employ consists of blue pill, half a scruple; antimonio-tartrate of potass, one grain; extract of conium, one scruple, divided into eight pills. The duration of treatment varies with the severity of the disease, and the susceptibility of the patient; but it is often sufficient to administer one pill thrice daily for four days, then twice daily for four days, and afterwards every night for a week. Under this treatment, the sonorous rhonchus usually disappears in a few days, or becomes audible only when the patient takes a deep inspiration, and the expectoration is rendered less tenacious and more opaque. When the breathing becomes comparatively easy, and the only rhonchus heard is the mucous, the mercurial pill may be given less frequently, and ipecacuanha, or, in debilitated subjects, compound squill pill, substituted for antimony. When all rhonchus has disappeared, some roughness of respiratory murmur is often observable, and till this is removed the mercury must not be suspended, or a relapse would be probable. An occasional purgative may be advantageously employed, and when the mercury is discontinued, iodide of potassium is often of value in establishing a healthy condition of the bronchial membrane."

*Reported in Lancet, Jan. 16, 1847.*

**ART. 13.—On Latent Pneumonia.** By M. SAUCEROTTE.

(*Gazette Médicale*, No. 50, 1846.)

Although the latent form of pneumonia is not unknown to practitioners, it has not attracted so much attention as it deserves. In fact, until the work of Grisolle and a thesis by M. Raymond appeared, we had not any monograph upon the subject. As it is, no observer, according to M. Saucerotte, has noticed the connection of the peculiar character of the disease (latency) with a certain epidemic constitution, but it has been customary to regard that character as depending either upon the obscurity of the signs furnished by auscultation and percussion, or upon the negligence or ignorance of the attendant. It is, however, certain that there is a form of pneumonia, which does not present either the ordinary symptoms or course of that affection, and which commences, so to speak, by the second stage, or that of hepatization.

[With these introductory remarks, the author proceeds to narrate several cases, from which he deduces the following general history of the disease:]

1. *Prenominatory symptoms* are either entirely absent or of slight importance, consisting in general feeling of lassitude, with shivering, loss of appetite, and but little fever.

2. *Symptoms.* The temperature of the skin is not sensibly augmented; the pungent heat of ordinary pneumonia is seldom or never present; and the pulse is usually but little affected. The respiration is natural, and the patient does not complain of pain in the chest. Percussion always elicits a dull sound over a considerable extent, and bronchial respiration is audible over the same locality. In some cases slight crepitation may be heard around the hepatized spot.

3. *Progress and duration.* The duration of latent pneumonia is variable, and depends much on the constitutional powers of the individual, the means which have been employed, and other modifying circumstances. In some cases we have seen the disease linger for six or seven weeks. When the case terminates favourably, the dullness gradually disappears, and the bronchial souffle is replaced by crepitation, respiration becomes more free, and the general aspect of the patient improves.

4. *Diagnosis.* Pleurisy is the affection with which latent phenomena are most likely to be confounded, and this error the author admits that he has often com-

mitted. In chronic pleurisy, however, there is more constantly a pain in the side, and the region of the dullness varies with the position of the patient. Apoplexy and bulging of the intercostal spaces shortly clear up the diagnosis. The history of the case and the locality of the dullness are sufficient to draw a distinction between the disease in question and phthisis.

5. *Causes.* For the most part, exposure to cold.

6. *Treatment.* The complete absence of, or slight febrile disturbance attending this disease renders general blood-letting unnecessary. The author usually applied the cupping-glasses or leeches, followed by plasters. The only internal medicine mentioned by him is the tartarized antimony.

ART. 14.—*Physical Signs of Incipient Phthisis.* M. Dubini has communicated the results of his researches into this difficult subject in semeiology. His ideas are for the most part in accordance with those of Fournet, Jackson, Louis, and others, to which he gives valuable confirmation.

In order to study the true signification of modifications of the expiratory murmur, as a diagnostic sign in incipient tuberculization, M. Dubini first endeavours to form an exact appreciation of this murmur in a state of health. As regards its duration and intensity, he adopts the scale of Fournet, which makes it as two, the expiration being as ten, in preference to the evaluation of Barth and Roger. He also lays great stress on the observations of Louis, who found the expiratory murmur prolonged under the right clavicle, but never under the left, in seventeen females exempt from pulmonary disease.

Prolonged expiration is not exclusively confined to the first stage of phthisis; it is met with in chlorosis, in pulmonary œdema, in severe heart diseases, in pleuritic effusions, in bronchitis, and in emphysema; but in emphysema, the expiration is whistling; in bronchitis, which is seldom partial, the whistling expiratory murmur is generally diffused over the chest; and so in other diseases in which the prolonged expiration is present, it exhibits certain peculiarities which distinguish it from the prolonged expiration due to tubercular deposit.

M. Dubini does not regard the above sign as constant in all varieties of tubercular deposit; it is absent when the matter is agglomerated in voluminous masses (crude tubercle), between which the pulmonary tissue remains crepitant. The variety in which it is commonly noticed is that which consists in a general infiltration of the pulmonary tissues with miliary granulations. It appears then that prolonged expiration may exist without tubercles, and tubercles without prolonged expiration; but there can be little fear of error when the expiratory bruit is persistent and rough, and more especially if it is unequal, interrupted, and limited to one or other subclavicular region. The diagnosis is rendered next to infallible, if, with this sign, there are accompanying general symptoms proper to the disease.

*Gazette Médicale*, No. 51, 1846.

ART. 15.—*Treatment of Epistaxis by Insufflations of Alum.* When hemorrhage from the nasal cavities assumes a dangerous aspect, recourse is generally had to plugging, a measure both inconvenient and painful. M. Lecluyse has successfully employed means far more simple, and at the same time, according to his own account, more certain—namely, the insufflation by means of a quill of equal parts of powdered gum arabic and alum. In one case this succeeded after three repetitions; other means, and plugging among them, having entirely failed.

*Prov. Med. Journ.*, Jan. 30, 1847.

#### SECT. IV.—DISEASES OF THE CIRCULATORY SYSTEM.

ART. 16.—*On the Venous Bruit.* By Dr. SYLVESTER.

(*Medical Gazette*, Nov. 20, 1846.)

In a paper read before the London Medical Society, Dr. Sylvester remarks, that a reference to the opinions of preceding writers upon the exact situation and nature of the continuous bruit, and its semeiological value, shows that the subject



requires further elucidation, and that he therefore thought it right to adduce the results of 100 observations made by himself, a tabular view of which he produced.

In regard to the age at which the phenomenon declares itself, he states, that the youngest subject was a boy 2 years old, the oldest a woman of 50. As regards sex, it was noticed in males only 8 times, 7 of whom were under 10 years of age; the remainder were females. Among the latter amenorrhœa was found in one-half the cases, menorrhagia in one-sixteenth, imperfect establishment of the menses in three cases only, making a total of sixty-six in which the uterine secretion was in an abnormal condition. This condition of this important function is rightly looked upon by the author as a concomitant, or, perhaps, effect, but not a cause of the disorder to which the term chlorosis is applied. A bruit is produced by some morbid poisons which appear to injure the constitution of the blood; this is frequently the case in the syphilitic cachexia; but is less frequently met with in other diseases arising from an animal poison, as scarlatina and typhus.

Of the 100 cases the complexion was pallid in 45; variable in the remainder; dyspeptic symptoms were present in 83 cases. The author regards the venous bruit as the remote consequence of indigestion, but does not think we can determine whether it is due to imperfect chylification or imperfect vitalization of the blood. The author appears also to regard the information afforded by the analyses of the blood as insufficient to determine upon what change in its composition the bruit depends; we must, however, think that in this remark the author must have overlooked the researches of Andral upon this very point, for which we refer the reader to our first vol. p. 326. In the greater number of the author's cases, the bruit was of the continuous form, and frequently mingled with musical sounds. The author admits the venous origin of the murmur, and explains its production according to well-known acoustic laws. The vein may, he observes, be likened to the string of a musical instrument in a high state of tension, vibrating more rapidly in consequence of the slight resistance offered by the abnormally-fluid blood. There is no good ground, according to him, for the opinion that sound is produced by the attrition of the blood-globules. The succession of musical murmurs is accounted for on the principle that the sounds of a single chord are capable of spontaneous division into subordinate tones more powerful than the fundamental note.

In reference to the treatment indicated by the presence of the venous murmur, the author found it convenient to regard it as occurring in three different conditions of system—1, with symptoms merely of dyspepsia; 2, with amenorrhœa; 3, in consequence of some morbid poison. These divisions have no natural limits, but answer a practical purpose. Steel was always found injurious in the first form, increasing the headache, and constipation, and destroying the appetite; whilst light diet, small doses of salts, and exercise quickly restored the patient's health. In the second case the author observes, that if there be a specific in medicine, it is steel judiciously administered for amenorrhœa with venous murmur; and the author prefers the sulphate of iron in doses of from 1 to 5 grs. in a tumbler of water. He thinks purging, and especially with mercury, rather injurious. For vicarious hemorrhages he exhibits full doses of cream of tartar.

#### ART. 17.—*On the Treatment of Angina Pectoris.* By P. M. LATHAM, M. D.

[The second volume of Dr. Latham's "Lectures on Diseases of the Heart," among other matter, contains a masterly description of the formidable affection known under the term *angina pectoris*. We shall not here take any notice of his views of the pathology of the disease, as we reserve this for our Report, in which we shall briefly analyse the entire volume; our abstract will be limited to the most practical matter which it contains upon the subject. Speaking of the paroxysm, he says:]

The two constituent elements of the paroxysm, the sense of dissolution and the pain, have each their appropriate remedy. The sense of dissolution calls for those stimulants which take effect in the quickest way, for ether and ammonia.

Ether can fetch up life from a deeper prostration than all other stimulants, and therefore it is to be chosen in the greatest extremity. Hoffman's ether and the

spiritus ammoniæ should always be within the patient's reach, and when the attack comes on, a teaspoonful of one or the other, or of both, should be given, just so much diluted as will allow them to be swallowed. If the paroxysms do not cease, the remedy must be repeated in a few minutes. And so on again and again, while the threatening dissolution continues, or while it is going and returning. The simple purpose is to keep life going until the paroxysm be over.

[Of the pain he observes:]

But the other element of the paroxysm, the pain, has its appropriate remedy. True; but before this remedy has time to reach it, the paroxysm and its pain are commonly both gone away together. When, however, the paroxysm is protracted for a quarter of an hour, or a whole hour, or when it goes and comes again at brief intervals, then its sharp, agonizing pain, continuous or recurring, is to be treated as pain; and then any other remedy is utterly useless but opium. A drachm of laudanum must be given with the ether, and given again in a quarter of an hour, if it have made no impression on the pain, and again in another quarter of an hour if the pain have not yet ceased, or have ceased and returned in all its strength.

[The treatment of the paroxysm, however important, is but a small part of the physician's duty; his main object is to discover the cause of the paroxysm, and to destroy, if possible, that combination of pathological circumstances upon which it depends. The means of doing this with the greatest certainty are thus stated by Dr. Latham:]

The paroxysm is often put off, and its severity mitigated and life prolonged, by no means more surely than by keeping the vascular system in a just balance between fulness and emptiness, between rich and poor blood. In some constitutions, very happily born, the balance maintains itself, and there is no need of interference on our part. In the majority it is not exact, yet exact enough for the ordinary purposes of health, but not enough when there is some grave infirmity to be palliated and made tolerable elsewhere. A small deviation on this side or that is readily felt and resented by the heart, when it has undergone some form of unsoundness, rendering it obnoxious to spasm.

Thus there have been cases in which my treatment of angina, in the intervals of the paroxysms, has chiefly turned upon reducing the nutritious and stimulant quality of the patient's diet, abridging his animal food, and denying him wine and fermented liquors. There was one case, and only one, in which I was driven to draw blood from the arm, an unusual and hard necessity. There have been more cases, on the other hand, in which the general habits of the patient have made me fearful of withdrawing support, and experience has shown the necessity of supplying a well-regulated amount of stimulus in the shape of wine daily. The administration of steel in the intervals of the paroxysms, has, I have convinced myself, in some instances, been instrumental to their postponement. (p. 406.)

#### ART. 18.—On Tubercular Pericarditis. By GEORGE BURROWS, M. D.

(Reported in *Med. Gazette*, March 12, 1847.)

After alluding to the rapid advances made in our knowledge of diseases of the heart during the past twenty years, the author refers to the paper of Dr. Taylor, on the "Causes of Pericarditis," published in the twenty-eighth volume of the "Transactions of the Medico-Chirurgical Society," where that physician assigns rheumatism, granular disease of the kidneys and extension of inflammation from contiguous parts, as the chief causes of pericarditis. To this opinion the author assents, but invites the attention of the Society to another form of that disease, which he designates tubercular pericarditis. After taking a review of the statements of different pathologists who have described tubercular deposits in the pericardium, more especially of the descriptions of Baillie, Laennec, Andral, Louis, and Rokitsansky, and of the opinion expressed by the latter, that tubercular diseases of the pericardium are the consequence, and not the cause of chronic inflammation of that membrane, the author proceeds to detail three cases of tubercular pericarditis.

CASE 1.—A young Italian was admitted into St. Bartholomew's Hospital, labouring

under the symptoms of incipient phthisis. After three weeks' residence in the hospital, the appearance of blood in the sputa caused a careful examination of the chest by the stethoscope to be made, when the physical signs of unsuspected pericarditis were detected. The friction-sounds of pericarditis were heard through fifteen consecutive days, and then subsided, leaving no cardiac murmur. At the expiration of two months, a fresh accession of fever, and examination by auscultation, indicated the presence of double pleurisy, which continued during nineteen days, when the man died. The post-mortem examination revealed the existence of abundance of effused lymph in the pericardium, of copious, serous and fibrinous exudations in either pleura as well as in the peritoneum. Numerous opaque, yellowish tubercles were found disseminated throughout the self-coagulable lymph effused on these membranes. The lungs also contained numerous tubercles in the crude state scattered throughout the different lobes; the bronchial glands and spleen also contained tubercles.

CASE 2.—A young man in Milbank Prison, when convalescent from chronic dysentery, was attacked with the symptoms of incipient phthisis, but auscultation detected no signs of extensive tubercular disease. The young man sunk, and upon examination after death, both lungs were found thickly studded with yellow tubercles, varying in size from a millet-seed to a small pea. The pericardium contained a large quantity of firm lymph, intensely stained with blood; and upon separating the layers of lymph towards the base of the heart, several small yellow tubercles were distinctly recognized in those portions which were most carefully examined.

CASE 3.—A young man, who had been imprisoned at the Hulks and at Milbank, became the subject of dysentery in the latter prison, from which he was convalescent, when he exhibited the symptoms of phthisis. Upon auscultation, Dr. Baly detected the presence of pericarditis, and he was forthwith removed to St. Bartholomew's Hospital. The physical signs of pericarditis were manifest during twenty consecutive days, and then disappeared, leaving the heart exempt from all murmurs. This young man quitted the hospital, convalescent, a few days after the cessation of the pericarditis; and although his recovery prevented the verification of the diagnosis of pericarditis, still the history of the case, so closely analogous to that of Case 2, and the absence of the usual causes of pericarditis, induced the author to regard Case 3 as one of tubercular disease of that membrane. The author then points out the class of cases in which this rare affection may be suspected—viz., in those persons who, having been long exposed to the most powerful exciting causes of tubercular cachexia, exhibit symptoms of incipient phthisis; and yet the auscultatory signs of tubercles in the lungs are inconclusive. In such persons, tubercular affections of serous membranes and of the pericardium should be looked for. The author then considers the pathological question, whether the tubercles are to be regarded as the cause or the effect of these chronic inflammations of the pericardium. After quoting the opinions of Laennec and Rokitsansky, who appear to regard the tubercles as the result of a change taking place in the layers of fibrin, consequent upon acute inflammation, and which tubercles then cause the inflammation to become chronic, the author endeavours to show that it is more in accordance with our present knowledge of the history of tubercle, to suppose the tubercles to be deposited on the pericardium in the first instance; and that these foreign bodies acting as exciting causes of inflammation there as elsewhere, keep up chronic inflammation. A similar train of phenomena may be observed in chronic tubercular peritonitis. The author concludes by pointing out how inapplicable the usual remedies for pericarditis are in the tubercular variety. Large losses of blood and the lavish use of mercury should be abstained from; while counter-irritation over the chest, saline diuretics with combinations of iodine, and the speedy removal of the patient from the influence of depressing causes, are the means most likely to arrest the progress of chronic pericarditis produced by the irritation of tubercular deposits.

---



# SECT. V.—ON THE DISEASES OF THE DIGESTIVE SYSTEM.

ART. 19.—*On the Semeiology of the Tongue.* By Dr. WRIGHT, Birmingham.

(*Medical Times*, Dec. 20, 1846.)

Dr. Wright observes, that whilst some are disposed, in a prodigality of prejudice, to look upon the tongue as pathognomonic of nearly all the "ills that flesh is heir to," others makes comparatively light of it, and consider its testimony as little trustworthy. To be amongst the best judges on the subject, is to belong to neither of these parties. As a rule, the tongue is a very faithful indication of the condition of the alimentary organs; but its evidences are not unexceptionable. A furred tongue, for instance, is a common indication of dyspepsia, but it is not a constant one. We sometimes meet with irritable nervous subjects, whose tongues are habitually furred, yet without any signs or symptoms whatever of gastric derangement. Others, again, will have clean tongues, and of natural redness, whilst they are suffering from severe stomach disorder. Various circumstances exert a remarkable influence upon this organ. Some people, otherwise healthy, get a furred clammy tongue if their stomachs are empty a little longer than usual. Others have their tongues furred always when their stomachs are full; the coating continues only during digestion, and passes off as this function ceases. Mental and moral emotions affect the condition of the tongue in a singular manner; perhaps it never becomes morbid without the nervous function, in its higher offices, being somewhat implicated. This would explain why a furred tongue is so rarely met with in the inferior animals. It may happen, and I think not unlikely, that in dyspepsia, the disorder the brain suffers, sympathetically with the stomach, has as much share as this organ itself in giving the tongue its characteristic coating. Certain it is, as I have said, that the feelings of the mind will, in a very few minutes, render a clean tongue a foul one. This is a subject which I have been induced curiously to inquire into for some years past, and I have seldom met with an exception to what I have just observed. Among the profoundly studious, amongst those terrified by sudden apprehensions, or shocked by the sudden advent of ill news; among the hypochondriacal, hysterical, gloomy, and desponding, you will find many examples of the mind's influence, in this particular, upon the body. A patient of mine, living near this town, will well illustrate what I say. He is a man of remarkably good constitution, and moulded like a miniature Hercules. Moreover, he has no incumbrances; an excellent mercantile business, that takes up little of his time, is partial employment for him, leaving him many leisure hours in every day that he has some difficulty in disposing of. These he chiefly occupies in fancying himself the victim of all possible kinds of ailment. There is no disease in the nosology too much for his imagination. Of course, these things are all imaginary, and tiresome enough to listen to, when your judgment and sense of justice tell you that it is not a case for "physic and a physician." You will anticipate my saying that this gentleman is possessed of a most unfortunate nervous sensibility, which chiefly manifests itself in an ideal pathology, all reflected upon his own person. The peculiarity in point, however, which I chiefly wish to speak of, refers to his tongue. I had never seen him with this organ quite clean (although I have not once attended him for dyspepsia), yet the readiness with which it acquires a fur is very remarkable. Many times have I examined his tongue, and found it comparatively what it ought to be, before hearing a recital of his imaginary maladies; and after this, in some quarter or half an hour's detail, that same tongue has put on an aspect almost like that of flannel. I am at this time attending with Mr. Carter, a patient, one amongst the pitiable many who have seen better days. I shall take occasion hereafter to give you his case in due detail, but, for the present, I may observe that his tongue has the peculiarity characteristic of the one just spoken of. I should premise, however, that there is a fancied trouble in the one instance, and a matter-of-fact one in the other. Four days ago, in calling upon the gentleman I am now alluding to, one of the first things I did was to look at his tongue. I found it as usual, very pale, flabby, and moist, but without any coating. After having made other necessary



inquiries, I was informed by my patient that his heart, which has long been disturbed by mental emotion, the other night beat with unusual vehemence and irregularity. On my asking if he could account for it, he told me that he had just then received the distressing intelligence that an uncle, from whom he expected a competency, had not left him a shilling! This pitiable tale, told with much earnestness and visible feeling, occupied little more than twenty minutes; at the end of that time I again looked at his tongue, and found it coated with a thick white fur!

I mention these things, thus generally, to you, not only as items in pathology with which you ought to be made familiar, but also as suggestive of a discreet rule of practice, viz., to let the examination of a patient's tongue be *one of your first duties at his bedside*. My own experience, perhaps not inconsiderable on this point, enables me to say that in nine cases out of ten, and more especially among females, the tongue will be found, on first entering the room, in a very different state to what it is after half an hour's questioning and manipulation.

ART. 20.—*Chlorate of Potass in Salivation*. Mr. Alison states, that having had many opportunities of observing the beneficial effects of the internal use of the chlorate of potassa, ( $\text{KO}, \text{ClO}_3$ ), in the various forms of pure anæmia, in which the intolerance of mercury is notorious, he was led to believe that as these closely resemble in many particulars the state of system produced by the full action of mercury, the medicine might be equally beneficial in the latter, and that the result of numerous trials exceeded his expectations. He warns us, however, that certain precautions are necessary in the use of the chlorate, as if it be given in injudiciously large doses, or for too long a time, it is apt to give rise to inflammatory symptoms. He thinks that it and mercury are antagonistic in their action.

*Medical Gazette*, Nov. 1846.

ART. 21.—*New Remedy for Mercurial Salivation*. An American physician, Dr. Robertson, of Harrodsburg, has discovered that one of the commonest plants of his district, the *Ambrosia trifida*, has more prompt remedial powers in cases of excessive pytalism, than anything he had previously tried. The patients are described as being generally relieved in six or eight hours of the more urgent symptoms, and completely cured in two days. The preparation employed is an infusion of the green leaves used as a gargle. Dr. Robertson suggests that the plant may also be found useful in other profluvia, as leucorrhœa. The plant is known under the popular term of horse-weed—horse-mint. Dr. Robertson was induced to try it from observing that it completely cured a horse affected with slabbering. The effect is simply local.

*Amer. Journ. of the Med. Sciences*, Oct. 1846.

ART. 22.—*Treatment of Dyspeptic Headache*. By GEORGE CHAPLIN CHILD, M. D.

[We have extracted the following practical remarks from a work which we shall further analyze in our Report. They embody the views of a man who has evidently had considerable opportunities of studying dyspepsia, and its various forms. He observes that:]

There is, perhaps, no single dyspeptic symptom that causes greater suffering than headache, or of which patients are more anxious to be relieved. Many apply on account of headache solely, without suspecting that it depends on a disordered stomach; and others, although aware of this, know also that the radical cure of their complaint is likely to occupy a considerable time, and they would, therefore, feel grateful if some palliative could be devised meanwhile to lessen present suffering.

The headache following a debauch in eating and drinking, seldom requires any special treatment, provided the stomach were previously in a sound state. The erythema of the mucous membrane subsides within forty-eight hours, and with it the symptomatic headache. In slight cases, if the headache be attended with collapse and debility, a little food or a dose of sal volatile in some aromatic infusion often does good.

After gross dietetic errors in persons whose stomach is already in a morbid state, the headache is apt to last for several days, and to be accompanied with various febrile symptoms. The gastric mucous membrane is, in fact, acutely inflamed, and should there be nothing to contraindicate it, the best treatment is to apply six or ten leeches to the epigastrium. When the headache has persisted for a considerable period, it may bring on determination of blood, and it may then be advisable to cup or leech the nape of the neck, or to apply leeches to the feet, and afterwards promote bleeding and revulsion by hot pediluvia.

In violent gastric and bilious headache, and in those where there is throbbing, cold applications, as bags of ice, are extremely useful, and at the same time, grateful to the patient; or the forehead may be occasionally moistened with a lotion containing one part of acetic ether diluted with four parts of water: either alone, to produce the full refrigerant effect, or combined with some anodyne, as tincture of aconite.

As the primary irritation in the stomach arises from food acting on morbidly sensitive nerves, it is always necessary to remove the exciting cause, as far as practicable, by enjoining a spare and bland diet. The undue sensibility of the stomach, as well as the predisposition to secondary pain in the nerves of the head, ought likewise to be temporarily blunted by anodynes. Of these, the extract of belladonna (gr.  $\frac{1}{8}$  to  $\frac{1}{4}$ ), or of henbane (gr.  $\frac{1}{2}$ ), with ipecacuanha (gr.  $\frac{1}{2}$ ), made into a pill with confection of roses, and given thrice daily, is the most useful.

In London, and probably in all large towns, the most frequent cause of headache is bilious congestion, to relieve which no remedy equals an emetic, as it strikes at the root of the disorder by thoroughly unloading the liver. This plan of treatment is nearly always admissible, for it is a mistake to suppose that an occasional emetic permanently weakens the stomach even of a dyspeptic. An emetic, however, is now an unfashionable remedy, and, what may be fairly allowed to have more weight, it is certainly a most disagreeable one. When, therefore, from this or any other reason, it cannot be given, our next best plan is to excite brisk action of the bowels, and thus drain off from the liver the suppressed or pent-up bile. At the same time, patients should be warned that drastic purgatives attain the proposed end only by the irritation they produce, first in the stomach and then in the duodenum and bowels, and that this excitement cannot fail to do mischief in cases of dyspepsia. Not only do drastic purgatives cause more irritation than an emetic, but they also unload the liver less effectually. The action of the latter is soon over, and one of its chief advantages is, that it obviates the necessity for giving large quantities of strong physic. All purgative medicines do not seem equally efficacious in procuring the downward evacuation of the bile. The best are calomel (gr. iv to vj), compound extract of colocynth (gr. x), compound powder of jalap (ʒss), and sulphate of manganese (gr. x), in half a tumblerful of water. When this last medicine does not produce sickness, it may be given for several days in succession without inconvenience, as its cholagogue power is great in comparison to its drastic properties.

The headache, observed in some dyspeptics, may be either entirely excited, or aggravated by uterine irritation. I have the notes of several cases of indigestion before me wherein the patients were not liable to headache at all, except just before the monthly periods. The same fact may be remarked in menorrhagia, and in other diseases of the uterus attended with irritation. If amenorrhœa be conjoined with dyspepsia, the headache will probably be worst at the time when the catamenia ought to appear, which is often marked by what is called a *molimen*, or effort of nature to bring on the secretion, denoted by feverishness and an increase in the uneasy sensations usually felt—namely, pain in the back, abdomen, &c. The application of from two to six leeches to the groin, at this particular period, often causes the discharge actually to appear, and in other cases proves so good a substitute for it, as to relieve nature, and cut short the headache. Warm stupes across the abdomen ought to be perseveringly employed.

When headache is complicated with plethora, or determination of blood to the head, leeching or cupping at the nape of the neck, may be necessary. The excess of blood, however, is often local only: or, on the contrary, the absolute quantity of it in the body may even be below the healthy standard. In such cases, it may be of consequence to avoid depletion, and it will generally be found that the lost

balance in the circulation may be corrected by dry-cupping and blisters, or other modes of counter-irritation applied to the epigastrium, together with sinapisms to the legs, and hot pediluvia.

ART. 23.—*Treatment of Colica Pictorum.* [Dr. Dick, in his alphabetical notice of facts connected with the organs of digestion, thus speaks on the above point:]

The treatment of this disease, practised in one of the principal hospitals of Paris, and which is often successful, is as follows:

First Day.—In the morning, a purgative enema is administered consisting of the following various ingredients:—An aromatic electuary, containing scammony, thirty parts; jalap powder, four parts; senna, eight parts; syrup of buckthorn, thirty parts; boiling water, 125 parts. During the day, a ptisan, made from cassia, sulphate of magnesia, and tartar emetic, is taken; and in the evening, an enema of walnut oil and red wine, succeeded by a *bolus calmant*, consisting of a drachm of theriaque (a senseless medley of almost every known antispasmodic, tonic, and narcotic), and one grain of opium.

Second day.—This day commences with an emetic, consisting of two-thirds of a grain of tartar emetic in eight ounces of water, divided into two doses, and taken at the interval of an hour. In the course of the day, a sudorific ptisan is drunk, composed of a decoction of somewhat more than six ounces of rasped guaiac in one pound and a half of water; this being boiled down to half that quantity. In the evening, the “calming bolus” (see first day) is repeated.

Third day.—This day commences with a laxative sudorific ptisan, consisting of an ounce of guaiac, half an ounce of sarsaparilla, a drachm or so of sassafras, the same of liquorice, half an ounce of senna, and so much water as to form, when boiled and strained, about half a pint of decoction. Soon after, a purgative potion is administered, consisting of an aromatic electuary, containing scammony, a drachm of jalap, two drachms of senna leaves, seven drachms of syrup of buckthorn, and one pound of boiling water. In the evening, the anodyne enema (see first day) and calming bolus (see ditto) are repeated.

Fourth day.—The same routine as the third.

Fifth day.—During the day, the sudorific ptisan is given, (see second day;) at four in the afternoon, the purgative enema, (see first day;) at six o'clock in the evening, the anodyne enema, (see ditto;) and at eight o'clock, the calming bolus, (see ditto,) are successively taken.

If the disease has not now yielded, the above whole series of treatment is repeated, (only the emetic solution is omitted,) and is continued until the abdominal pains are removed, and the patient goes regularly to stool.

It must be owned that the treatment now detailed is very methodical, and is a not unskilful *mélange* of means calculated to stimulate the bowels, and to quiet them and relieve their spasmodic action alternately.

Alum and sulphuric acid also undoubtedly possess something like specific powers in the treatment of lead colic. Kapeler recommends from two to four or five drachms of alum to be dissolved in five ounces of a demulcent jalap, and this to be taken in doses of a spoonful every hour. In Germany, this is much used, and is very successful. Dr. Copland states that he has uniformly succeeded by means of alum, which, however, he combines with camphor, cayenne pepper, and occasionally opium, and assists with oleaginous clysters. Gendrin recommends as a prophylactic to operatives engaged in lead mines or manufactories, a sulphuric acid “lemonade,” as he calls it, consisting of a drachm or two in a pint or more of water, sweetened so as to make it agreeable, and taken in quantities of twelve or sixteen ounces in a day.

Besides the means now enumerated, elaterium, croton oil, calomel, and many things else, have been suggested and tried, in lead colic, with various results. We should, however, ourselves prefer the French treatment above detailed, or the albuminous treatment, which, it may be observed, “more certainly” (to use Dr. Copland’s words) “opens the bowels than any other.

*Lancet*, March 13, 1847.



ART. 24.—*On Insidious Inflammation and Ulceration of the Intestines.*  
By Dr. BASHAM.

(*Prov. Med. and Surg. Journal*, Jan. 13, 1847.)

[The following practical remarks on the obscurity which sometimes involves progressive and fatal abdominal affections, form part of a clinical lecture by Dr. Basham, who observes, on the occasion of an appropriate example:]

It is remarkable that inflammation and ulceration of the intestines are oftentimes accompanied by indeterminate and most obscure symptoms. From our knowledge of the functions of the intestines, and of the important part they perform in the animal economy, we might almost infer that the slightest deviation from healthy action would be expressed by some unequivocal symptom, which would emphatically declare the seat of the derangement; but such is not so. Of all the organs of the body under the influence of disease the intestines exhibit the least expressive and most variable symptoms. This arises from the widespread influence exercised by the intestinal function over other and distinct organs, and the powerful sympathy excited in them by intestinal derangement; hence it is that certain portions of the intestinal tube, whether in a state of simple congestion, or even passing into ulcerative disorganization, may almost be said to possess no true pathognomonic characters, oftentimes giving rise to symptoms simulative of other diseases, and thereby masking the real though latent disorder.

The case before us is a well-marked example of the disguise under which intestinal mischief may present itself, and proceed to a fatal termination without developing any prominent abdominal indications. Except some trifling tympanitis of the abdomen, all the symptoms declared for cerebral rather than abdominal disease.

It is commonly asserted in books that inflammation of the intestines in adults is easily determined and recognized in every part of their extent; but that in infants, and in the earlier periods of life, it is admitted that much obscurity often hangs over the symptoms. In children acute enteritis is frequently expressed by cerebral symptoms, but, in adults, on the contrary, the greatest variety of sympathetic irritations develop themselves, and as a general rule it may be stated that the enteritis of children is more frequently expressed by cerebral irritation than in the adult; yet enteric disease in the latter not unfrequently declares itself by symptoms chiefly cerebral. It is usually asserted, and practically it is true, that inflammation and disease of certain distinct portions of the intestinal canal are sufficiently well marked by specific pathognomonic symptoms. Thus, in inflammation of the duodenum, or as the stomach is usually involved in gastro-duodenitis, this condition is declared by the presence of more or less jaundice, pain and fullness over the region of the duodenum, irritable stomach, loaded urine, and clay-colored dejections. If the stomach be alone the seat of inflammation, vomiting (obstinate and constant) of a green bilious fluid, is the most prominent symptom. If diarrhœa, long-continued and exhausting, present itself, experience justifies us in fixing on the colon as the seat of the disease. Thus, when these isolated portions of the alimentary canal are involved in inflammatory or diseased actions, the signs by which they are recognized, and the symptoms by which they are accompanied, are sufficiently distinct and unequivocal. Post-mortem examination testifies to the truth of this point in semeiology, for after frequent and obstinate vomiting the stomach is found inflamed, and injected, and after long-continued diarrhœa, the mucous membrane of the colon is found in a similar condition. Now, conversely, this is true also, viz., if no vomiting or diarrhœa be present during life, we may safely infer the absence of any inflammatory condition of the stomach or large intestine. In the case before us there was neither vomiting nor diarrhœa, and the dissection proved the stomach and colon to be natural in appearance and entirely free from any trace of disease.

The symptoms usually present in adults when the middle portions of the intestinal tube, the jejunum, and ileum, are the seat of disease, are those of continued fever; hot skin, quick pulse, urgent thirst, tongue red, parched and dry, tympanitic abdomen, with iliac tenderness, great physical prostration, and mental stupor.



It is very rare that inflammation of the ileum in the adult proceeding on to ulceration is unaccompanied by some of these symptoms more or less prominently expressed, and when a case occurs in which all are absent, and in the place of them a clean moist tongue, skin not elevated in temperature, no physical prostration, no abdominal tenderness, some slight resonance of the abdomen, a sharp quick pulse, with a remarkable amount of stupor and sudden death, with post-mortem proofs of extensive ulceration in the ileum and cæcum, and no cerebral lesion beyond congestion, the record of such a case becomes interesting from its deviation from ordinary examples, and is of much value and moment if it presents any analogy to cases of similar irregularity recorded by others. Dr. Stokes records a case of enteritis in which extensive ulceration existed in the lower portion of the ileum; neither vomiting nor diarrhœa was present during life, and the stomach and colon were found perfectly free from vascularity. "In this case," he says, "the absence of vomiting and of diarrhœa in the more advanced periods is extremely interesting as connected with the healthy state of the stomach and colon." In the case under consideration there was neither vomiting nor diarrhœa during life; the stomach and colon were free from all vestiges of disease, yet the ileum and cæcum exhibited many ulcerations in the lower portion of the ileum and the cæcum was in a state of complete disorganization. Again, Andral relates a case of a patient, aged 35, "who was attacked with pain of the head, followed by great loquacity and exaltation of ideas, and other symptoms of cerebral excitement. The tongue was natural, and the abdomen soft and not painful. He had soon after furious delirium and indications of strong determination to the head. Copious general bleeding, and the application of leeches to the neck, produced no alleviation, and the patient expired suddenly in the midst of a general spasm. The only local symptom of an affection of the bowels during the disease was a slight diarrhœa. On dissection, the brain and its membranes were found perfectly healthy, but the lower third of the ileum was in the state of acute inflammation."<sup>\*</sup>

As it is not doubted that much obscurity frequently attends inflammatory and ulcerative disease of the small intestines, it is of great moment to determine what signs are of most value by which we can distinguish the latent disease among the many sympathetic and anomalous conditions that involve it in obscurity. Is there any one specific indication on which we can uniformly depend? I believe not; nor do I believe that any series of symptoms is sufficiently constant to be relied on, as distinctly expressive of enteric ulceration. We have already seen that although a hot skin, dry tongue, thirst, abdominal tenderness, and tympany, with indications of stupor, when present, may be accepted as proofs of enteric disease, yet the present case, as well as others elsewhere recorded, unquestionably declares, that ulceration may exist without any such catenation of symptoms. Now although ulceration of the ileum and cæcum may exist without a hot skin, with a moist, clean-looking tongue, without any morbid thirst, and with dejections, even natural and bilious in appearance, and no abdominal tenderness or tension, yet there are accompanying symptoms, chiefly cerebral, which, though oftentimes obscure, will, if closely watched, tempt us at any rate to doubt the presence of inflammatory action in the brain; and if so, to cause us to direct our attention to some other organ for an interpretation of this sympathetic irritation of the brain. I am anxious to ascertain if there be any peculiarity about the cerebral symptoms, by which we can distinguish them from those which arise in true inflammation of the brain and its meninges: whether any distinction can be made between the symptoms developed in encephalitis or arachnitis, and those witnessed in cerebral irritation from enteric disease. In attempting this distinction, we must confine ourselves strictly to the mental symptoms; for the state of the pulse, skin, tongue, and excretions, could only testify to the amount of concomitant fever. In cerebral inflammation there are usually observed wild raving delirium, a great amount of physical violence, incoherence of ideas, extraordinary hallucinations, sleeplessness, and general restlessness; these are succeeded by a condition more or less indicative of coma. The cerebral symptoms developed as sympathetic with intestinal disease, are characterized usually by a peculiar stupor: there is no raving delirium; the patient lies passive, dull, and motionless, can be roused to

\* Cyclopædia of Practical Medicine.

temporary consciousness, will protrude the tongue when energetically required to do so; the nights are sleepless, but the patient remains quiet and apparently undisturbed; the pupils are oftentimes dilated and the eyeballs glazed. These are the usual characters of the symptoms in sympathetic irritation of the brain from abdominal irritation. Yet it is evident that these symptoms cannot always be relied on, as in Andral's case, the symptoms were of exaltation of all the mental faculties, with incoherence and delirium. I cannot but advise you, however, to suspect something other than cranial disease, if a case presents itself with peculiar stupor, which I have noticed, and which has not been preceded by other acute symptoms of cerebral inflammation; if, in addition to this stupor, there be abdominal tension and tympanitis, the head symptoms may with great reason be suspected to be sympathetic. If also there be tenderness about the right iliac region on pressure, with hot skin, dry tongue, &c., there can be little doubt of the existence of enteric disease.

**ART. 25.—Iodine Liniment in Bowel Complaints.** Mr. M'Diarmid has employed an iodine liniment as an external application to the abdomen in various affections of the bowels with marked benefit.

The iodine, in the proportion of a scruple to the ounce of olive oil, is freely smeared over the entire surface of the abdomen, and the operation is repeated as soon as the liniment is absorbed and the skin has again become dry and colorless, or almost so. In infants, two or three applications may, according to the writer, be safely employed in the twenty-four hours, and in the adult more frequently, if necessary, that is, in acute cases; while in those of a chronic form, probably its free application once a day would be the more advisable plan.

In the acute forms of diarrhœa of infants, in which the surface of the abdomen feels hot and dry, somewhat tender and full, with great irritability of the bowels, and frequent watery stools, changeable in color, and offensive, with symptoms of a febrile state generally, the writer states that he has seen in some cases an almost magical effect from the liniment, and that in a few hours.

In chronic forms of the disease, where there is increasing emaciation, and the glandular system connected with the digestive organs is evidently obstructed, the careful employment of the iodine liniment will, he thinks, in conjunction with other suitable measures, prove a very satisfactory remedy.

*Brit. Amer. Journ. of Med. Sciences, Nov. 1846.*

**ART. 26.—Treatment of Hemorrhage of the Bowels in Fever, by a combination of Senna and Matico.** Dr. Watmough states that he has frequently used matico in hemorrhage, but was pleased to find that in combination with senna it had a particularly beneficial effect in melœna occurring during the progress of typhus fever. His formula is two drachms of each infused in a pint of water. The dose a wineglassful, to be taken frequently.

*Prov. Med. Journal, March 10, 1847.*

**ART. 27.—Bismuth in Diarrhœa.** Rayer uses the tris-nitrate of bismuth in the diarrhœa of phthisical patients, and in that which occurs in typhus with great success. It is also much employed in the diarrhœa of infancy. Guérard recommends under similar circumstances, injections of nitrate of silver, ten grains to the quart of water. In children the strength should be diminished.

*Monthly Journ. of Med. Science, Jan. 1847.*

**ART. 28.—The Urine in Ascites.** In ascites, dependent on lesion of the liver, the urine is always more or less deeply colored, whilst in renal ascites, (Bright's disease or otherwise,) the urine is white and colorless—(Rayer.) This characteristic condition of urine in ascites was perfectly known to the Arabian physicians.

*Monthly Journ. of Med. Science, Dec. 1847.*

## SECT. VI.—DISEASES OF UNCERTAIN OR VARIABLE SEAT.

ART. 29.—*Treatment of Diabetes.* Dr. Williams, of Colchester, states that the medicines from which he has found most (*although but temporary*) relief are, Dover's powder in moderate doses at bedtime, the carbonate of ammonia in ten-grain doses three times a day, and occasionally the vapour-bath; he has also used quinine, acetate of lead, and alum, but with no appreciable benefit. As regards diet, it will be desirable to avoid saccharine and farinaceous articles as much as we can; but in actual practice it will be found that we can exercise but very little influence over our patients in the matter of their diet. From what he has seen of the use of cod-liver oil in strumous disease, he should be disposed to expect considerable benefit from it in diabetes, if we have an opportunity of administering it in the onset of the disease. It deserves attention, both for its medicinal and dietetic properties; it ministers powerfully to nutrition, and by its alterative properties appears to modify the whole character of the strumous habit. He has not had an opportunity of testing its merits in this disease, since the remedy attracted any attention; but expects that it will prove of great benefit, even should it not altogether cure the disease.

*Prov. Med. Journal, Dec. 30, 1846.*

ART. 30.—*Diagnosis of Scrofulous Disease.* [In reference to the outward marks of the tuberculous diathesis, Dr. Wilshire has made the following, to us at least, new observation. His words are:] In allusion to the tuberculous forms of scrofulous disorder, there is a point of great interest and importance, in my mind, and to which I would direct your attention for a moment. It is to a means of diagnosis I refer—a means I have nowhere read about, nor did I hear anything of it until I alluded to it one evening at the London Medical Society, where, although certain statements were made, I heard nothing to warrant me in refusing myself the credit, if there is any, of its first promulgation. It is this: you shall have a child brought to you who has dark irides, no colour in the cheeks, and darkish hair: the eye is often very full and large, looking (to use the words of one of the late house-surgeons of the infirmary, to whom I was talking about the subject) “as if they would eat you;” the eyelashes very long, close together, so long as sometimes to be three or four times their common length: I have seen them so long that when the eye was closed they quite rested on the cheek. Now, if you examine the forehead of such a child, you will find it covered with close-lying hair, sometimes almost down to the eyebrows; if you strip the child you will find its arms covered too, and the back from the hair of the head down between the shoulder-blades quite hairy, the hairs often being very thickly placed, and dark in colour; in fact, the child is quite a hairy child—not quite an Orson, but still very hairy. Often, indeed, the whole appearance of the patient is cachectic as well. Now, in nine cases out of ten, such a child is tuberculous; it either has tubercles already deposited, or else is liable, is tending to it, and that perhaps in almost every organ of the body, and in the lungs especially. This hairy condition in a cachectic or unhealthy-looking child is a sign, generally speaking, of a constitution miserable in the extreme—saturated with scrofula.

*Medical Times, April 10, 1847.*

## SECT. VII.—DISEASES OF THE SKIN.

ART. 31.—*On the Syphilitic Diseases of the Skin.* BY W. H. PORTER, M. D., Professor of Surgery to the Royal College of Surgeons, Ireland.

(*Dublin Medical Press, March 10, 1847.*)

[The subjoined extract forms one of a very valuable series of lectures on syphilis; we have chosen this particular one for extraction because it treats of a



class of disease not in general sufficiently comprehended, and which offers in many cases the greatest difficulties in diagnosis. Dr. Porter thus proceeds:}

One of the earliest, most constant, and most characteristic of the secondary symptoms is the cutaneous eruption. and, as is the case with almost all others, so is this marked by the greatest variety and complication. I know of no class of venereal symptoms so difficult to arrange or to describe, and this difficulty seems to have been fully experienced by others; for before the subject was taken up by Dr. Willan, nothing could have been more meagre and inaccurate than the notions entertained, and the descriptions attempted of them even by eminent authors, the only character, by which they were designated or known, being the vague and uncertain one of presenting a copper-colour. Willan had, previous to his untimely death, distinguished and delineated five different species of syphilitic eruptions which may be found amongst the same number of his orders, but the attempt at farther classification was relinquished (on insufficient grounds) by Bateman, who, in other respects, undertook the completion of Willan's work. Since that time nothing has been done farther than arranging these eruptions under four heads—the papular, pustular, scaly, and tubercular; but these, however true, are evidently insufficient, for several, clearly proceeding from a venereal taint, are thus omitted; and indeed so great is the diversity of character in these eruptions, that all the orders of Willan's classification are occasionally found among them: moreover, when we observe that they differ from each other, not only in different persons, but in the same, and that one individual may afford examples of three or four of them at the same time, the difficulty of constructing an arrangement becomes apparent. Venereal eruptions also in their temporary disappearances often *recur* under quite a different form—a circumstance which, while it tends to illustrate the capricious incertitude of their appearance, strongly impugns the opinion that each variety indicates the presence of a separate and distinct morbid poison.

In endeavouring to describe these forms of eruption, I shall follow the system which I adopted in attempting to become acquainted with them, by referring as much as possible to the classes and orders of Willan, these being most familiar to the student, and withal permitting the notice of each variety or species with the greatest facility: in assigning them, however, to their proper classes, it is necessary to keep in recollection that it is on the symptoms attending their first stages that any arrangement can be formed. In their subsequent progress they all undergo many changes, and often lose their definite characters: a sufficient knowledge of the later symptoms being the only way in which the cases may be traced to their primitive stages. For example, the papular, scaly, or exanthematous eruptions generally terminate in stains or discolorations of the skin, and seldom or never in scabs or ulcers, but the latter are very commonly attendant on the vesicular, pustular, and tubercular species.

In general, syphilitic eruptions are immediately preceded by some constitutional symptoms, the most frequent and regular of which are pains resembling rheumatism in the head and shoulders, which are greatly aggravated at night when the patient is warm in bed, and become mitigated on the approach of morning: sometimes there is fever of the low irritative kind, and sometimes a well-marked hectic with night-sweats, general wasting, and great prostration of strength. Like all other symptoms of syphilis, these vary in intensity, and the antecedent fever bears no relation to the quantity of eruption that is to succeed, but it manifestly does so to the quality, the cutaneous affections that have a tendency to ulceration being always ushered in by the severer forms of constitutional distress. Thus the papular or scaly sometimes occur without any premonitory symptom at all, and always without fever or any remarkable loss of flesh. I have seen persons covered with these eruptions, who were fat, florid, and in every other respect apparently in the enjoyment of the rudest health. Not so, however, with the pustular or tubercular, in which an opposite condition prevails, and which, therefore, appear more remarkable on account of the wan, worn, and haggard countenances of the patients.

CLASS I.—PAPULA. I place this the first in order, because it is by far the most frequent of occurrence, and may be found on all parts of the body, excepting, perhaps, the palms of the hands and soles of the feet, where I do not recollect to have seen it. The name is derived from the word *papula*, a pimple, which is defined,

a small acuminate elevation of the cuticle with inflamed base, seldom containing a fluid or suppurating, and then but partially, commonly terminating in a thin scale or scurf. These pimples present a great variety in their mode of arrangement; sometimes they are separate and but thinly scattered over the surfaces on which they are situated—sometimes they are very numerous and close set, though distinct, forming patches from the size of a sixpence to half-a-crown, with little intervals between them, and thus, according to the disposition of the spots, the papular eruption may be divided into species. It has also been termed "*lichen*," from some fancied resemblance to the vegetable moss on rocks, and by most respectable authority, Baco<sup>t</sup> and Carmichael, for instance, has been stated to follow gonorrhœa, but I have never seen it, and believing that the diseases are in their natures so essentially different, I can by no means subscribe to the opinion. The varieties of lichen syphilitica met with are—

1. *Lichen simplex*, which consists of numerous distinct papulæ scattered over the face and arms, thinly on the body, and still more sparingly over the lower extremities.

2. *Lichen circumscriptus*.—In this variety the papulæ are congregated into distinct patches, in which the pimples are nevertheless separate, and do not run into each other. They scale in small branny furfuraceous specks, and when this little scale is on the pimple it looks not very unlike matter, and may be mistaken for a pustule. This eruption is more seldom seen on the face than any other depending on a syphilitic taint; it is frequent on the shoulders and back, where it looks like an irregular calico pattern. Often it annoys the patient with its itchiness. It does not degenerate into an ulcer, and I have seen it remain for months unaltered. It generally accompanies some other symptom, such as ulcerated throat, inflammation of the eye, &c., and is often found mixed up and complicated with other forms of eruption.

3. *Lichen pilaris*.—I recollect the late Mr. Hewson to have shown two or three cases of disease which he called by this name, and he always mentioned it in his lectures as a syphilitic species, stating that in it the papulæ were extremely numerous and minute, and instead of being, as the term "*pilaris*" would imply, at the roots of the hairs of the skin, that every pore appeared open, prominent and red. This eruption must be very rare. I do not recollect to have recognized it, independently of the cases above alluded to, and I possess no drawing of it: still I can well imagine its occurrence now and then, for I believe there is no form of cutaneous disease that is not more or less simulated by syphilis.

Occasionally in all the forms of papular eruption, a slight deviation from the definition above given may be observed in their appearing to exhibit a tendency to suppuration. This occurs merely at the apices of the pimples, and is totally different from the suppuration that distinguishes pustules which occupies them to their very base. The circumstances under which papulæ show the greatest tendency thus partially to suppurate are, when they are densely spread over the skin or congregated into the close patches: in such cases they are always more prominent and more inflamed than when thinly scattered, and then it is that they present a closer approximation to the pustular state.

I read in several authors that the papular eruption is curable without mercury, and that it will wear itself out and disappear in the course of fifteen or sixteen months—I believe it would, but only to reappear again, or be succeeded by something worse. It does, however, yield to the influence of mercury with great rapidity: the moment the mouth is affected its progress is checked, and it begins to fade; but recollect there is a great deal of difference between the arrest of a symptom and the perfect removal of the disease, which, in the case of any form of constitutional syphilis, will require six weeks or two months. A long time, however, must elapse before the macule it leaves in the skin disappear, and even after the disease has been completely cured, a certain degree of discoloration marks the situation of a papular eruption.

CLASS III.—*SQUAME, SCALY DISEASES*. I do not know why the term scaly should be restricted to the venereal psoriasis and lepra, inasmuch as I think every syphilitic eruption has as great a tendency to scale as every syphilitic ulcer has to scab, or crust: the papulæ and exanthemata form scales as well as the other affections; but as the psoriasis is often described as "*the scaly*" eruption alone, I shall still

adhere to this mode of arrangement. Psoriasis, according to Willan, appears in small, distinct, but irregular patches of laminated scales, with little or no elevation around them. The patches very seldom extend to the size of a sixpence: they have not the oval or circular form by which all the varieties of lepra are distinguished. The scale formed upon each of them is thin, and may be easily detached, leaving a shining red base. On the contrary, when the eruption is circular, and the base elevated, red, and indurated, it comes within the species lepra. I am not quite certain of having ever met with any syphilitic form of disease strictly referable to this latter species, and I think some confusion may have existed between it and the tubercular. When it was the custom to consider the erythema mercuriale as an aggravated form of syphilis, it is quite possible that its advanced stage might have been regarded as an inveterate form of lepra, and treated or maltreated accordingly; and at the present day something like lepra may occasionally be observed on the inside of the thighs, and about the nates and pubes of infants affected with congenital syphilis, but not so distinctly or satisfactorily made out as to warrant their being placed in a separate class; I have therefore resolved to omit the consideration of lepra at present, and more particularly so as the description given of it by Willan corresponds with sufficient exactness to that of the tubercular eruption.

1. *Psoriasis guttata* commonly appears on the forehead and face, back of the neck, breast, and posterior parts of the arms, and consists of a number of distinct spots, slightly, if at all, elevated above the surface of the skin, varying in size from that of a small spangle to a silver penny, of a deep copper colour, but changing its depth of tint according to the heat of the weather, or other causes of excitement. In the course of a very short time a small thin furfuraceous scale forms on this, which, becoming loose about the circumference, but adherent at the centre, gives a branny powdery appearance to the part. This eruption, as far as I know, never degenerates into ulceration, but on its disappearance leaves a red macula somewhat depressed in the centre, which, however, does not remain nearly so long as the stains after lichen. With this eruption there is often a good deal of constitutional disturbance combined, and not unfrequently there are excavated ulcers of the throat. It is said to be of more rare occurrence now than formerly, but of the truth of that assertion I am incompetent to form an opinion, neither, if true, am I able to account for the fact.

2. *Psoriasis gyrata*.—There can be no doubt that the scaly venereal disease frequently assumes this form, and even when the general affection is of the species already described, some of the spots may be found to assume a circular or oval disposition, leaving the skin within the rings free from scale or discoloration, and thus giving the part a dappled or mottled appearance. This form of psoriasis runs exactly the same course as the preceding. It has been stated that it ulcerates, but I have never seen it, nor do I think it ever assumes such a malignant character.

3. *Psoriasis palmaria*.—The hands and occasionally, though far less frequently, the feet, are affected by an eruptive disease referable to this class. In the palms, where the skin is thick and firm, the natural lines or folds are seen to chap and crack, sometimes with, but oftener without, any fluid discharge. The cuticle first becomes hard and horny, then it opens, and the edges of the fissure are white, elevated, and look as if a chalky or earthy deposit had been laid down in them. The palm of the hand is mottled, being evidently stained with a copper-coloured tint around the fissures. These cracks are termed rhagades; they occur on the hands, not on the feet, although the latter are not exempt from the eruption, and when they produce a discharge, it has the offensive smell so constant and so characteristic of the syphilitic taint—they are seldom unaccompanied by some other symptom, and are not painful, at least I have never known a patient complain of them alone.

The scaly eruptions may, like the lichenous, wear themselves out and disappear; but it will be after a long time, and will by no means be indicative of a cure of the disease. They yield with great rapidity to mercury, and fade, leaving a stain which does not finally disappear for seven or eight weeks: in other respects I do not think them worthy of special remark. They are usually accompanied by ulcerated throat, or other syphilitic symptom, which will demand equal



attention, and the removal of which will be of equal importance; for in these cases it cannot be too often and too forcibly impressed upon you, we administer mercury, not for the removal of any one particular symptom, but for the total eradication of the morbid poison from which these symptoms proceed.

Besides those which I have endeavoured to describe, we occasionally see a cutaneous affection which, though perhaps strictly not belonging to the class psoriasis, approaches more nearly to it than to any other; I have not, however, placed it amongst the syphilitic species, because I am not certain of its appearing *always* in connection with the taint. It consists of patches of discoloration, scarcely, if at all, elevated above the surface, their edges circumscribed and well defined, their colour amber, very nearly resembling that of tarnished brass, the scales few, very small, and powdery. They do not seem to observe any particular situation, except that as yet I have not seen them on the face. The manner of their distribution is uncertain and irregular; in one case only one side of the neck under the jaw was the seat of the affection; in another, a singular macula, about the size of a crown-piece, appeared on the inside of the thigh; and in another example, the shoulders, back, breast, and abdomen were covered. This eruption, when syphilitic, is always a late symptom, and yields more slowly to mercury than any other cutaneous affection with which I am acquainted. It was regarded by an authority, which I respect most highly, as being *always* syphilitic, and I have no doubt of its being generally so, but I think I have seen it in cases where no reasonable suspicion could be entertained of the existence of a taint.

CLASS III.—EXANTHEMATATA, RASHES. If we assume the character of the exanthemata to be “a superficial red patch of different shades of colour diffused irregularly over the body, terminating in minute exfoliations of cuticle,” there can be no doubt of its connection with syphilitic disease—that is, that venereal patients occasionally exhibit such symptoms, along with others, that admit of no question. Thus, in connection with the lichen simplex, a diffused redness is often seen, pervading the breast, abdomen, and anterior parts of the arms and thighs, which varies in intensity of colour according to circumstances, and finally disappears before the papulæ are removed. Again, the psoriasis guttata, when on the decline, assumes somewhat of this appearance, and care must be taken not to mistake one for the other. Again, I am satisfied I have seen exanthematous eruptions accompany, and sometimes precede, ulcerations in the throat, and therefore I may not deny them a place amongst syphilitic diseases; but they are so uncertain in their nature that I should never pronounce a person diseased who had this form of cutaneous affection alone. I have heard it stated that it is more exempt from constitutional derangement than any other eruption, and not attended with ulcers in the throat; and I well recollect to have heard patients decided on as being tainted, and seen them in some instances put under a mercurial course, who exhibited no other symptom. Now, this I should never advise. Exanthematous eruptions may proceed from a variety of causes wholly unconnected with syphilis, and although fully satisfied that they may occasionally occur from it also, yet the matter is so obscure, and the diagnosis of a purely syphilitic rash so very difficult and uncertain, that I could not feel justified in prescribing mercury for it in the absence of every other symptom, and particularly those which so constantly accompany other diseases of the skin, the pseudo-rheumatic pains and the ulcerated throat.

CLASS IV.—PUSTULÆ, VESICULÆ. In considering the venereal eruptions hitherto, we had occasion to remark on their general mildness of character—that the usual preceding and accompanying constitutional symptoms were in some instances so trivial as almost to escape observation, in all destitute of any extraordinary severity, and that the local diseases had little or no tendency to degenerate into ulceration; the picture, however, is now about to be reversed, and in this and the succeeding class we shall have to examine cutaneous affections, loathsome and offensive in appearance, painful and harassing in their concomitant symptoms, and extremely hazardous in their results. Dr. Willan has described a vesicular form of syphilitic eruption, which he calls “*rupia syphilitica*,” in which, after the usual febrile symptoms of more than usual severity, a crop of extremely minute vesicles break out over the body, limbs, face, and scalp: on the third day, the contained fluid becomes opaque and puriform; and on the fourth, the pustules

break and scab, which scab, on falling off, in some parts leaves the surface dry—in others, exposes an irritable and painful ulceration. I have never seen this eruption, or rather I should say I have never seen the pustular in this early or vesicular stage, for, excepting in the fact that the pustular is more enduring and does not break and scab on the fourth day, they appear to me to be identical, alike in their constitutional symptoms, in their tendency to ulceration, and in the distress and suffering they occasion. I shall pass, therefore, at once to a description of the pustular eruption. I have seen it stated somewhere that the resemblance this bore to the pustules of small-pox first gave occasion to the names of *la vérole*, the pox, or the great-pox, as expressive of some analogy between the two diseases; but if any such resemblance ever existed, one malady or the other must have undergone some remarkable alteration since, for at present there is scarcely the slightest similitude traceable. I have also heard a conjecture hazarded that this is the original form the venereal disease assumed, and that it would have remained so had not the whole nature and genius of syphilis been changed by the influence of mercury upon it. I know not whether this hypothesis has any foundation, nor is it of the least importance; it may be that this was the original form of eruption, for the horrible pains, the wasting of the limbs, and the foul, and fetid, and loathsome ulcers described by the early writers answer well to the symptoms and consequences of the pustular eruptions now. I am equally ignorant also of any particular influence that mercury might have exerted over any one particular symptom, for as its use was probably coeval, or nearly so, with the appearance of “the new and terrible disease,” we never can form a reasonable conjecture as to what syphilis might have been, had it been permitted to run its own course. There are two points, however, of which there exists no doubt—one, that this form of eruption is much less frequent of occurrence than it must have been formerly; and the other that its appearance is wholly uninfluenced by mercury. I have seen it both in cases where that medicine had and had not been administered. It is usually preceded by intense headaches and agonizing pains of the limbs, accelerated pulse, and profuse perspirations; the patient becomes worn and wasted, his skin dirty and clammy, and his countenance expresses sickness and suffering. At first the eruption breaks forth in a number of small pimples, sometimes sparingly, sometimes extensively spread over the face, body, and limbs, particularly on the face. In the apices of these, lymph (it is said) is first deposited, but whether it is so or not, purulent matter is very speedily observed. The pustules are of various sizes, generally smaller than those of small-pox, but instead of desiccating and throwing off the scab, leaving a sound cuticle underneath, as in that disease, they more commonly spread into superficial ulcers covered with a thick dark-coloured scab; and when a number of pustules coalesce, extensive ulcerations form, which very soon crust or scab, creating an appearance which I shall shortly have to describe. This form of disease Willan calls *ecthyma syphilitica*, and when the eruption assumes this character, the patient's sufferings are frightful, and his danger very great; no means that can be employed will give relief from the pain and irritation—no change of posture procure a remission of distress, for in whatever position he places himself he must press on a tender irritable surface. The discharge is so copious as to demand a constant change of dressings, and the fetor of it particularly offensive. The patient enjoys no rest, and harassed with want of sleep, and with soreness and pains in his limbs, rapidly emaciates. He is worn down with hectic, the pulse being always above 100—sometimes 120 or 130; he has urgent thirst, failure of appetite, and generally colliquative diarrhœa; and, unless the disease is met by judicious treatment, he soon sinks under this complication of misery, and dies, a wretched example of a most loathsome disease. As the pustular eruption produces a scab, and the tubercular does so likewise, I shall pass on to the latter at once, feeling that I can advantageously discuss that stage of both affections together.

CLASS V.—TUBERCULA. There is extraordinary difficulty in dealing with this class of venereal eruptions, for first there is no comprehensive and therefore satisfactory definition of the word tubercle, that of Bateman being manifestly imperfect; and, secondly, there is some confusion in the application of the term, certain writers applying it to the rupia, which, however a consequence of this eruption, follows on the pustular also. I can, therefore, have very little assist-

ance from authors, and must endeavour to describe the disease as it has appeared to my own observation. I think there are three different forms of tubercular eruption, or rather that it may be observed to pass through three stages previous to its termination in the rupial ulcer or scab.

1. It commences by the formation in succession of a number of flat tumours, varying in size from that of a pea to a small walnut, situated underneath the integuments, principally about the arms, shoulders, eyelids, and cheeks, moveable in the subcutaneous cellular structure, unconnected with the skin, free from pain, and when they disappear, leaving no stain or mark upon it.

2. The second stage is that in which the tubercle becomes fixed and adherent to the surrounding tissues. The integuments assume a dark-red color, verging on purple; the surrounding redness and tumefaction increase, and after a day or two the little tumour presents every appearance of a common boil advancing to suppuration. I have known more than one case in which a lancet has been plunged into this form of tubercle—in some instances a very unfortunate mistake; but such operation is never followed by a discharge of matter, the tumour not containing any, but consisting of a soft cheesy substance, like the genuine scrofulous tubercle. The disease deserves its name as much from its pathological structure as its external appearance.

3. The third is the ulcerative stage, and I think it passes through this in various ways. Sometimes, like other syphilitic eruptions, they soon form branny scales, which drop off and leave a slightly excoriated surface, from which moisture exudes, when another scale is formed, until a regular crust is formed. These crusts do not resemble rupia at first: they are more of a white colour, and seldom occupy the entire surface of the tubercle. Occasionally we see half the tubercle covered with this dirty white crust, the remainder being red and coppery: at length the entire of the tubercle ulcerates away down below the level of the adjoining skin, and then a sore is formed, and a scab which constitutes the veritable rupia. Sometimes, and unfortunately it is the more frequent course, the ulcerative process, commencing in the centre of the tumour, almost immediately assumes the phagedenic character, and spreads rapidly, producing frightful sores, and when situated on the face, incurable deformity. When these sores scab, they form the rupia also, which I shall now proceed to notice.

The term rupia "is arbitrarily formed from *ρυπος*, sordes, as indicative of the ill smell and sordid condition of the diseased parts," and has been applied to other diseases as well as syphilis; there is therefore the less reason for confining it to one form of venereal scab, as is too often done. I have already mentioned as one character of the venereal ulcer, its irresistible tendency to crust or scab when exposed to the air. This seems to be true of all these ulcers, whether large or small, primary or secondary, and all these sores and scabs have the same rupial quality, that of being foul and fetid. In seeking, then, the cause of rupia, we are to inquire, not why the sore forms a prominent or projecting scab, but why one particular form of eruption should have a tendency to ulceration more than another. I have already mentioned Mr. Carmichael's views to you, and if you agree with him that each eruption is a distinct and separate disease, resulting from the inoculation of a distinct and separate poison, the question is answered at once, and there is no farther difficulty; but if you do not assent to that doctrine, it will be necessary to seek some other explanation of the fact. It is not very satisfactory to attribute these occurrences to the constitution of the patient, because no one can tell how or in what manner the state of the general health can determine the appearance of one symptom rather than another; yet when we see some forms of eruption preceded and accompanied by excessive illness, such as languor, depression of strength and spirit, headache, pains of the limbs, restlessness, loss of appetite, and irregularity of the bowels, and others in which the patient's health seems free from the least disturbance, it is impossible to resist the conclusion, that the same cause (whatever it is) that creates and maintains the febrile condition, also modifies their attendant local symptoms. In examining the primary sores, we admitted the efficacy of mercury, of diet, of exercise—in a word, of the constitution, in modifying their appearances and characters; and there is no reason why a similar influence on the secondary ulcer, which is only another symptom of the same disease, should be denied. The peculiarity of the eruption, then,



seems to proceed from some constitutional idiosyncrasy—the tendency to the formation of a scab results from the sore being syphilitic. I think we may observe three forms of rupia.

1. The *rupia simplex*.—In this, the scab or crust is but slightly raised above the adjacent surface, is convex in shape, of a dark-brown colour, and more adherent to the centre than the edges of the subjacent ulcer, for when pressed, matter pumps up around its border. This kind of scab forms equally on the primary and on the secondary ulcer, when exposed to the air, and if picked off, or removed by poultice, is very quickly renewed; when the ulcer is healed, a dark-red stain remains in the skin for a great length of time.

2. The *rupia prominens* derives its name from its shape, and is formed by the gradual accumulation of the scab into a small pyramidal or conical crust, in appearance not inaptly compared to a limpet shell; it occurs where the scab has been undisturbed while the superficial ulceration was extending. I think this form of rupia attends the tubercular eruption more frequently than the pustular, although occasionally met with in both; and in the early stage, when detached, a soft excoriated fungus is found underneath; in the latter stages, the ulceration is flat, and too frequently assumes a phagedenic character.

Almost all authorities on venereal disease, concur in considering this as a mercurial rather than a syphilitic symptom, or, at least, produced by the combined operation of both the poisons, and it would seem presumptuous in me to gainsay or deny an opinion, that appears to rest on such extended experience; still, there are many circumstances that would induce me to hesitate before I gave it an unqualified assent. It is difficult, at the period of the disease when rupia appears, to say whether mercury has or has not been given, the probability being, that in the great majority, if not all such cases, it had been employed in one form or another; and it is still more difficult to discover whether, having been given, it had agreed or not. The chance, then, is that in every case of rupia, some supposed connexion with mercury can be made out, but it by no means follows that such connexion must necessarily have produced the symptom; in some cases it may amount to presumptive evidence—in none, to proof. Again, the ulceration attendant on rupia is generally of the phagedenic type, and we all know how fond practitioners are of attributing this to mercury; we have seen, in considering the primary ulcers, how closely the subjects of mercury and phagedena were there united; but we also saw that it might occur totally independent of it—that some chancres were phagedenic from the commencement, before a grain of mercury had been used at all—that others were made so by intemperance—others by injury or local mismanagement—and if primary sores are thus susceptible of being altered by so many influences, it is neither fair nor philosophical to attribute similar effects in the secondary to a single and solitary agency. Again, it is stated that practically, mercury is not only injurious but destructive when here administered, and language cannot be stronger than that in which it is generally denounced; now I shall not argue on the inconsequence, that because the medicine disagrees it must necessarily be a mercurial disease, but I grapple at once with the practical fact, and deny its accuracy. I grant, that a rash and hasty administration of mercury, without previous inquiry and preparation, will be likely to do mischief in every case; I think it injudicious to employ it whilst the febrile symptoms are severe, and that there are some cases in which it can never be prescribed at all; but I know that there are some in which it can be, and has been used, with the greatest possible advantage. Practically, I regard this in the same light with the phagedenic chancre, and those who universally decry mercury in such case, will do right to avoid it here—those also, who, with Mr. Carmichael, consider them as parts of the same disease, emanating from the same poison, will be justified in adopting his opinion, “that it often renders this malady actually incurable;” but those who have seen these phagedenic ulcerations, both primary and secondary, treated with mercury, and healed with safety and rapidity, must of necessity distrust their own senses, before they can assent to the doctrine of their being mercurial. Lastly, and however shallow the ground on which I rest this argument may appear to others, I place great reliance on it, the appearance of rupia indicates a syphilitic, not a mercurial origin. The mercurial sore has no such tendency to scab, much less to form such a castellated structure of crusts as the rupia promi-

nens; the mercurial sore is seldom circular, as is that under the rupia, and when it spreads, it is by herpetic ulceration, not by phagedenic—even when its progress is rapid and destructive, it is by sloughing. Under all these circumstances, therefore, I cannot assent to the prevailing doctrine, however respectably supported, nor can I concur in the opinion that mercury is universally injurious; I know it may be so, in numerous instances—I know it will be so always, if rashly, or hastily, or injudiciously administered; but I also know, that I have prescribed it frequently with the best effect where, I believe, nothing else would have procured the recovery of the patient.

3. I know not exactly in what class to place this form of venereal scab; probably it approaches the *ecthyma cachecticum* more closely than any other. It differs from the rupia just described, in being depressed below the surface, in being of a darker brown colour, smaller in size, more numerous, more thickly scattered over the body, and more adherent to the surface of the ulcer underneath. It bears a strong resemblance to a burnt hole covered with a small eschar, and in the cases in which I have remarked it, had followed the pustular eruption: but I would by no means attempt to infer from that circumstance that it is proper or peculiar to it. It is generally both preceded and accompanied by a more severe form of constitutional fever, and appears in persons of broken and debilitated habits; probably it is from this latter circumstance that mercury has so little effect on it, for it will often remain for a considerable time uninfluenced by it, even although the patient shall be strongly salivated. It never assumes the elevation of the rupia prominens, and when it heals it is by the formation of skin under the scab, which drops off, leaving a depressed red cicatrix, that after the lapse of several months becomes whiter or paler than the adjacent skin, and the patient presents an appearance of having been the subject of numerous scrofulous ulcerations. This is decidedly the most unfavourable form of cutaneous disease I have ever met with; many die of it—some apparently recover, but sink and die of consumption, dropsy, or some similar disease afterwards, and the few who escape, probably never enjoy perfect health or strength again.

Whatever doubt may exist as to the treatment of other forms of rupia, there can be none about this. Mercury ought never to be exhibited. It exerts no specific influence on the disease, and from the state of the patient's health and constitution, must be more or less injurious. He should, if possible, be removed to the country, and be treated with bark, sarsaparilla, the acids, a generous diet, wine and porter. Under such management he may be so far restored as to wear out a few years of sickly existence; but I never saw one in whom I could venture to try mercury: the disease, therefore, remains uncured, and sooner or later brings its victim to a melancholy end.

WARTS. I have already, when treating of primary symptoms, considered the subject of warts, inclusive of the mucous tubercle, or soft wart; they need not, therefore, be referred to again in this place. It will be necessary, however, shortly to notice certain tumours which appear as secondary symptoms about the pudendum of the female and the anus in both sexes, and are termed condylomata. These are broad elevations, the surfaces of which are sometimes excoriated and flat—sometimes red, and exhibiting an appearance as if formed of very minute granulations; they are occasionally painful, but more commonly the patient's complaint is of itchiness, and this to such an extent as to banish sleep. They distil an ichorous reddish-coloured discharge, which is very offensive, and renders the patient most uncomfortable. They seldom appear as a solitary symptom, being generally accompanied by some other secondary form of the disease, particularly similar broad flattened elevations situated far back on the dorsum of the tongue—when both these are present, they are so characteristic that no doubt can exist as to the nature of the disease. It is necessary, however, to ascertain that the tumours under examination are really condylomata, for there are several affections of these parts bearing a strong similitude to them. I have lately seen in an infant not a year old, one side of the pudendum and the anus grievously affected with similar excrescences, which I imagine were scrofulous, and at all events were removed by local applications. I have seen the red cauliflower warts occupying these situations, and in their early stages easily mistaken for condylomata—when they grow to a larger size, as they generally do, they become easily recognizable.

The button-scurvy very frequently occupies the neighbourhood of the anus, and in its commencement resembles condylomata; but the occurrence of similar tumours elsewhere, and the shape, and form, and elevation of them, will be sufficient to point out their nature. Of all the secondary symptoms of syphilis, I think the condyloma yields most readily and quickly to the influence of mercury; scarcely has the mouth been touched when the ichiness subsides, the discharge diminishes, and the tumours begin to fade; soon afterwards they are absorbed, and their situation remains unaltered and without stain, as if it had never been the seat of disease.

**Button-scurvy.** Few persons, when treating of the venereal disease, ever think of introducing the subject of button-scurvy, for few believe that it can originate in, or be connected with, a syphilitic taint, but there are some few who entertain that opinion, and therefore it will be necessary briefly to examine the question, although I cannot hope to throw any *very* satisfactory light upon it. The truth is, there seems to be in many regions of the earth a disease in several points resembling syphilis, such as in being communicable by contact, producing a tubercular eruption with a disposition to scab, painful ulcerations, and, if neglected, a tendency to affect the bones, but unlike it, in always producing the one form of eruption, in its rendering the patient (it is said) insusceptible of a second infection, and above all, in its being not only curable without mercury, but in its being likely to be injured by it. Such are the Frambœsia of the continental writers—the yaws of Africa and the West Indies—the sibbens or sivvens of Scotland, and the button-scurvy of this country. Whether these are all examples of the same disease, modified by climate, diet, habit, and other accidental circumstances, or whether each is a distinct and separate malady, it is not easy to determine, for there is ample authority to sustain either opinion; but the point for us to become acquainted with is, whether button-scurvy, the disease as it appears in Ireland, ever is or ought to be regarded as a syphilitic symptom. It prevails to a considerable extent in the provinces of Munster and Connaught, and is not generally considered venereal by the practitioners in these localities; it always assumes the one form, that of a tubercular elevation, which in process of time is covered by a scab, but so unlike the crust of rupia as not to be mistaken for it. It is, according to the authorities above referred to, curable by local applications alone, and never requires mercury. I know not whether, like the yaws, one attack indemnifies the patient from any future illness of the same kind, or like sivvens, it would, if neglected, attack the bones. These are the arguments against the idea of its being syphilitic, and they appear to be so cogent that it is difficult to resist them; but several practitioners, who have industriously considered the subject, regard it as syphilitic, and deny its curability without mercury, and we have not a sufficiently accurate history of the disease to enable us to determine the question. It appears clearly enough to be communicable by contact, wearing the same clothes, sleeping in the same bed, using the same vessels, and so far is a primary symptom; neither has it necessarily any preceding or accompanying constitutional derangement, for I have seen persons the subjects of it, otherwise in apparently the best of health; but is it never a secondary symptom—never constitutional? Is it the fact that syphilis, which simulates every form of cutaneous eruption, excludes this one, and if it be so, why is it that any experienced well-informed surgeon, not to say many of them, should ever have adopted and maintained so erroneous an opinion? Now, if we apply the test which I have endeavoured to lay down, that of having miscarriages, or dead or pocky children, I am satisfied that this has occurred to females who never exhibited any external symptom but button-scurvy, and also that these females were harassed by pains in the bones and other pseudo-rheumatic symptoms, and therefore I am driven to the conclusion, either that the eruption was there over and above and independent of the syphilitic disease that occasioned the pocky offspring, or else that it was the form in which the secondary symptom was developed. Again, in applying the test of mercury, no doubt button-scurvy can be *most generally* cured without it, and if a syphilitic taint remained after it, it is quite impossible but it must have been noticed in districts where it prevails, where numbers of children are infected and cured, and grow up to be healthy and laborious men and women afterwards; but it is equally certain that some cases resist local applications, and yield readily to mercury after-



wards. It has so happened that I have seen a great number of cases of this disease, and been led by circumstances to pay a great deal of attention to the subject. The late Mr. Hewson, whose name I have had occasion to mention so frequently, considered button-scum as a syphilitic symptom, and as he was almost an ultra-mercurialist, he treated them all with mercury, the preparation he preferred being the corrosive sublimate in minute doses. I held the contrary opinion, and guided my practice accordingly, and I must say that, although both were wrong in principle, his practice appeared the more successful, for I met with several cases in which I was obliged to abandon my own views and adopt his. I have now come to the conclusion (but recollect, it is only the opinion of an individual), that button-scum is generally a purely local disease, but that it is sometimes constitutional also—that where it passes from house to house, or from cabin to cabin, obviously the result of contact, it is so far a local disease that it may be removed by local remedies, but that it may and does arise without such contact—that it is then constitutional, and, as far as I know, always *connected with a venereal taint*. I have seen cases in the better classes of life where infection by contact was impossible: where that by means of clothes was equally impossible, unless through the intervention of the washerwoman, when it should equally have infected every member of the family; where the eruption was attended by pains in the bones and other suspicious symptoms, and, above all, where the nature of the malady was tested and proved by the appearance of a tainted offspring. I have seen such cases, and I know not where to class or place them except within the precincts of syphilis. I know it may be said that it will disappear under the influence of cleanliness, good air, and the use of sarsaparilla and iodine, or the acids, in short, that it is curable without mercury—to be sure it is, and so is every mild form of syphilitic eruption with which we are acquainted; but the question is, will such disappearance prove tantamount to a removal of the constitutional cause of the disease whatever it is, and guarantee to the patient that his or her future children will be healthy? I am also quite aware that many practitioners who have perhaps not seen, or, as is more likely, not observed such cases, will, in adhering to the general opinions entertained on the subject, utterly deny the possibility of its ever arising from syphilis: be it so—I cannot help it. I have here only undertaken to explain that which I believe to be truth; I cannot force you to receive it—I cannot compel you or others to give up or even to modify opinions that seem supported by a far greater weight of authority; but I ask you to see for yourselves before you finally and unequivocally determine thus or any other practical point, and if you are guided by experience, and by it alone, I have no fear of the result.

ART. 32.—*Treatment of Syphilitic Eruptions of the Skin.* By M. CAZENAVE.

(*British and Foreign Med. Review*, April, 1847.)

[As a sequel to the preceding important paper, we cannot do better than insert the following portion of an analysis of M. Cazenave's, "*Traité des Syphilides*," which has recently appeared in the pages of the "*British and Foreign Medical Review*." M. Cazenave justly retains the reputation of being one of the first, if not the first authority of the day, on this class of diseases. The reviewer observes:]

It were useless to enumerate the long list of remedies which have been employed in the treatment of constitutional syphilitic affections; we shall, therefore, confine ourselves to a consideration of those, the utility of which has been demonstrated by experience. M. Cazenave gives a preference to mercury above all other remedies, in the treatment of venereal eruptions. He has found it, after long experience, to act with greater certainty and promptitude than any other medicinal agent in this class of disease, and although it may not be able to eradicate altogether the syphilitic constitutional taint, it can so modify it as to prevent a speedy relapse. Our own experience with regard to the treatment of the syphilides fully bears out M. Cazenave's views on this point. We have witnessed in the practice of Biett, and more recently in that of M. Cazenave himself, the hap-

piest results follow the judicious administration of mercury, and this, after a variety of other remedies had failed either to remove or modify the eruption or the constitutional taint.

M. Cazenave strongly condemns, and justly so, the production of salivation, as recommended by some writers on this subject. He has found mercurial inunction most serviceable in the secondary form of syphilitic affections, in which the bones are involved, but still more so in the primary syphilides. A scruple at first, and subsequently two scruples of mercurial ointment may be rubbed in, and a warm bath every third day, will cleanse the skin and facilitate the absorption of the mercury. It has been recommended to apply the ointment to the prepuce; but this practice is objectionable, in consequence of the irritation and tumefaction of the glans it produces. The author prefers applying the mercurial ointment internally in the form of pills, after the manner of Bielt, and according to the following formula: mercurial ointment and sarsaparilla powder, of each three scruples; mix and divide into forty pills; one to be taken morning and evening, to begin with, and afterwards the dose may be increased to four pills during the day, but not to exceed this. This method, however, is slow, and unfortunately has a great tendency to produce pyalism, which should always be prevented if possible.

*Protochloride of mercury.* Calomel is, perhaps, the least active of all the mercurial preparations in the treatment of venereal affections of the skin; nevertheless, it has been recommended by Clare, Cullerier, and Brachet, of Lyons, and Bielt has found it in some rare cases attended with good effects when snuffed into the nostrils. It is now seldom employed.

*Bichloride of mercury.* This remedy ranks amongst the most useful preparations of mercury, for the treatment of syphilitic skin complaints, but it is difficult to be able to push it far enough to effect the object in view, and other preparations answering the purpose so well without this drawback, that practitioners are not very fond of employing it frequently. Bielt used to administer it, in the form of pills, thus: alcoholic extract of aconite, six grains; bichloride of mercury, two grains; marshmallows powder, eighteen grains; make eight pills. Begin with one pill *per diem*, and increase the dose gradually to four each day. For our own parts, we prefer using all remedies in skin complaints in a fluid form. They are more diffusible through the system in this than in the more solid form, and we have invariably found their action more certain, and the curative effects more rapid when administered in the manner indicated. For this reason we prefer with M. Cazenave, employing Van Swieten's liquor, or Larrey's syrup, to Bielt's pills; besides, they are much easier borne by the patient. But M. Cazenave, like his preceptor, is generally fond of pills.

*Ammoniacal proto-nitrate of mercury.* This remedy, which is the soluble mercury of Hahnemann, is very useful. It is more easily managed and easier borne by the patient than the preceding. It operates with promptness, and may be used beneficially either in a mild or severe form of the eruption. The author prescribes it in the form of pills: soluble mercury of Hahnemann, two scruples; liquorice powder, two scruples; make forty pills. One pill night and morning, to be increased afterwards to four pills *per diem*. The remedy is borne well by feeble and delicate patients.

*Iodides of mercury.* Of all the mercurial preparations, and of all the remedies of whatsoever kind, which have been recommended in the treatment of the syphilides, none can approach in therapeutic value, the iodides of mercury. We are indebted to Bielt for the introduction of these valuable remedies in the treatment of the venereal eruptions. This practitioner at first preferred the biniodide, and administered it in pills in the following form: biniodide of mercury, ten grains; liquorice powder, one drachm; make sixty pills. Dose, from two to three *per diem*. But he soon relinquished this preparation for the more manageable and more efficient protoiodide of mercury. This is undoubtedly one of the most valuable remedies we possess, and it is certainly that under the influence of which we can almost invariably modify, if we cannot cure, the syphilitic eruptions. This agent seems to acquire a double value from the combination of iodine with mercury. In the great majority of cases, it is easily borne by patients, and may be continued for a considerable period without causing inconvenience. It seldom

occasions salivation. Like all the mercurial preparations, it may derange the digestive organs and occasion diarrhœa: but these accidents occur but seldom, are slight in their nature, and speedily disappear on the temporary suspension of the medicine. The skin is specifically influenced by the protoiodide of mercury. The patches of the disease assume a more lively and healthy aspect, and evince a tendency to resolution. But the beneficial influence of the remedy is not confined to the skin, for the general condition and aspect of the patient undergo a remarkable alteration. The countenance becomes more animated, and the eruption advances towards resolution with a rapidity which, in some instances, is really surprising. It is worthy of note, that when the administration of the protoiodide is likely to be followed by beneficial results, these latter will begin to appear in the course of a very few days from the commencement of the treatment. M. Cazenave relates a number of cases in support of the remedial efficacy of the protoiodide of mercury in the syphilitic eruptions. He has not in the least exaggerated the merits of this excellent remedy, for we ourselves have seen all he has said in favour of it fully borne out in practice, in his wards at the Hospital of Saint Louis, and in our own practice in this country. He usually administers the protoiodide internally in doses of one, two, or three, to four grains *per diem*. In the mild, simple forms, not of long standing, M. Cazenave uses the following formula:

Protoiodide of mercury, ten grains;  
Liquorice powder, thirty grains;

make twenty pills. Dose: to begin with one, to be increased to two, and afterwards to four pills in the twenty-four hours.

In the severe and inveterate forms of the disease, as for example, the tubercular varieties, where a more active and energetic method of treatment is indispensable, the author prefers the following:

Protoiodide of mercury, two scruples;  
Liquorice powder, four scruples;

make forty pills. To be administered in the same manner as the preceding.

It is sometimes necessary to commence with two pills, and to increase the dose rapidly. The mercurial preparation should not be prescribed in too small doses. The author has repeatedly observed this remedy unattended by any beneficial results when so administered; but as soon as the dose was increased and given freely, it had the desired effect. Bielt ascertained that when opium is given freely in combination with the protoiodide of mercury, the therapeutic qualities of the latter are completely neutralized; hence we should always prescribe it in an uncombined form.

Notwithstanding the great and important advantages to be derived from the mercurial preparations in the treatment of syphilides, it is but fair to add, that in some cases they do not succeed. Whether from idiosyncrasy, the patient will not bear the medicine long enough, or from a repugnance to it, he will not allow it to be prescribed, or from morbid irritability of the digestive organs, the remedy cannot be administered at all; from whichever of these causes it occurs, there is no doubt that we are sometimes baffled in our attempts to relieve the patient. Other remedies have been sometimes recommended when the foregoing fails, but our faith in their efficacy is not great.

*Acids.* In some of the milder syphilitic affections, as *S. roseola*, *S. papula*, the exhibition of the acids is not unfrequently followed with benefit. The author orders nitric acid (dilute) in doses of four minims three times a day, in barley-water, or orgeat. In the severer forms it may be tried when the preceding medicine fails.

*Gold.* The preparations of gold are not of much service in the secondary forms of syphilis, and the author has very little faith in the remedial powers in the treatment of the syphilides. The preparations of silver, so strongly recommended by M. Serres, of Montpellier, have been frequently tested by Bielt and M. Cazenave, but always without success. The author recommends sudorifics as useful auxiliaries to the mercurial preparations, and has even found them occasionally beneficial when unaided by other medicine. Iodine, in its simple form, although extolled by many writers for its efficacy in syphilitic secondary disease, has



invariably failed in the hands of M. Cazenave. But there are combinations of iodine, other than those already described, which are extremely useful in many cases; these are the iodide of iron and the iodide of potassium.

*Iodide of iron* has been recommended by M. Ricord in secondary syphilis, and the author's experience leads him to believe that it may be sometimes useful, but not so frequently as M. Ricord imagines. This preparation appears to us to be objectionable from the chemical changes which it is liable to, for it is almost impossible to keep it from undergoing a certain degree of decomposition in the solid form, and even the solution, with a coil of iron wire to preserve it, cannot be kept long decomposed. In our own practice we use a *syrup* of the iodide of iron, which continues for several months without undergoing any change. This preparation is made by several London chemists.

*Iodide of potassium.* M. Cazenave has found the iodide of potassium to be only second to the iodide of mercury in its valuable therapeutic effects in the treatment of the syphilitic eruptions. Indeed, he seems to think that in some instances it is fully as efficacious as the mercurial preparation. Although he has occasionally observed it to cause considerable pain at the epigastrium and posterior fauces, it can generally be continued six or seven weeks, or longer with impunity. The author uses two formulæ, a stronger and a weaker, which are prescribed according to the condition of the patient, the irritability of the constitution, and the duration and severity of the particular eruption present.

Iodide of potassium,  $\mathfrak{z}\text{ij}$ ;

Distilled water,  $\mathfrak{z}\text{avj}$ ;

Syrup,  $\mathfrak{z}\text{ij}$ . Mix.

Dose: two or three spoonfuls *per diem*.

Or the following:

Iodide of potassium,  $\mathfrak{z}\text{ij}$ ;

Syrup,  $\mathfrak{z}\text{v}$ .

Dose: to begin with one spoonful, then two, and subsequently three in the twenty-four hours.

The practitioner must always be guided in the selection of the treatment by the nature and form of the eruption, its duration, the particular constitution of the patient, and the anterior treatment. The acids are indicated in the semi-acute varieties, especially in *S. exanthemata*, *S. vesiculæ*, and one or two forms of syphilitic lichen. Sudorifics are mostly of use in the pustular, but particularly the squamous eruptions, and, as we have before stated, the mercurial preparations are specially applicable in the most severe forms of syphilitic eruptions. Whatever may be the treatment adopted, it should always be preceded by what one may call preparatory measures, both hygienic and medicinal. This observation applies in particular to those cases where the mercurial preparations are to be administered. Biett always gave opium in small doses for a week or two before he prescribed the protoiodide of mercury, and generally with good effect; and during the administration of the latter, he recommended the occasional use of the vapour-bath and sudorifics.

M. Cazenave has not much faith in topical remedies in the treatment of syphilides. He seldom uses ointments, unless to dress an ulcerated surface, and then employs this formula:

Protoiodide of mercury,  $\mathfrak{D}\text{j}$ ;

Prepared lard,  $\mathfrak{z}\text{j}$ . Mix.

The author has sometimes employed with benefit the following ointment in cases of syphilitic lupus, with the view of modifying the parts of the skin:

Biniodide of mercury, gr.  $\text{xij}$ ;

Prepared lard,  $\mathfrak{z}\text{j}$ . Mix.

Baths are extremely useful auxiliaries in the treatment of syphilides. The vapour-bath and douche are particularly serviceable in the papular, tubercular, and squamous varieties. Tepid baths, rendered emollient by the addition of starch and gelatine, are beneficial in certain forms of the exanthemata, in lichen, and in impetigo syphilitica. Alkaline baths are also useful in these forms, and in certain stages of the pustular syphilides, when the dryness of the scabs seems to indicate that the ulcers are cicatrized. Cinnabar fumigations are often very

serviceable in the tubercular eruptions, when administered directly by means of an apparatus to the diseased parts. It is particularly applicable in cases of tubercle on the scrotum and about the anus. Dr. Burgess recommends a preparation of iodine and sulphur in the form of vapour in these and similar cases.\* *R. sulphuris ℥iij; hyd. sulph. rubri ℥ij; iodinii gr. x; M. ft. pulv. sex.* Dr. Burgess states, that he has found this remedy exceedingly beneficial in the squamous and tubercular eruptions. It should be applied in the form of vapour, by means of an apparatus, to the parts affected.

M. Cazenave considers it indispensably necessary that the treatment should be continued for some time after the eruption has disappeared. It is impossible to lay down any precise rules as to the limits of this period, which, it is evident, must be regulated by the character of the preceding disease and the tact of the physician. If the eruption was mild, of short duration, and yielded easily to the treatment, say in the course of a month or six weeks, it should be continued for a month longer, at the same time gradually diminishing the dose. If the disease, on the contrary, was of a severe and obstinate character, of considerable duration, and the treatment had occupied a period of several months, the patient should be allowed to repose for about a fortnight after the disappearance of the disease, and then the treatment may be recommenced and followed in the same manner as before for a given period, then discontinued and begun again, as in the first instance. It is sometimes necessary to discontinue the medicine three different times before we have done. It is a singular instance, and one worthy of being remembered, that a patient who may have borne the mercurial remedies well for several months without intermission, will suddenly, and after the discontinuance of the treatment for a few days, evince an almost invincible intolerance of the remedy employed. This is a sure indication that the treatment is complete.

ART. 33.—*Blisters to prevent Pitting in Confluent Small-pox.* M. Piorry has for some time past derived great assistance from the use of blisters as a means of preventing the scarring of the face by the cicatrices of confluent small-pox. The pus, retained so long in contact with the tissues, and altered in character through the agency of the air which passes through the pustules by endosmosis, causes extensive local destruction, and proves very injurious to the system when reabsorbed. Various practitioners have proposed measures for obviating this inconvenience, as by cauterization of each pustule (impossible in confluent disease), the opening them by scissors, needles, &c. Experience, however, shows that over such means the blister has the advantage of—1st, opening at one time the whole of the pustules over which it is applied; 2d, evacuating their entire contents, and preventing the consequences of the sojourn or reabsorption of pus; 3d, counteracting the attendant erysipelas by diminishing the swelling; and, 4th, causing the scabs to fall off much sooner from the face than from other parts of the body. It has an advantage over mercurial plasters in not risking the excitement of salivation, the extent of evil which results from its use being a slight ischuria. The various plasters applied as abortives in this disease, have been reproached with exerting a repellent action, and directing the morbid action upon the brain and its membranes. A blister, on the contrary, rather acts as a derivative.

*Medico-Chirurg. Review, Jan. 1847, from the Gaz. des Hôpitaux, No. 101.*

ART. 34.—*Application of the Tincture of Iodine for the same purpose.* Dr Samuel Jackson (late of Northumberland) was led, in April, 1845, to make an experiment of aborting small-pox by the tincture of iodine, from contemplating its powerful influence over erysipelas. He applied it to one arm of a child eleven months old, in confluent small-pox, on the third day of the eruption, and to the arm which appeared the worst, rubbing it freely on with a sponge, three times that day and twice the next. On the 11th day, when the pocks over the whole body were at their height, elevated with hard bases, those of the medicated arm were entirely flat, with thin, purulent matter under the dead cuticle, without any swelling of the

\* Translation of Cazenave's Manual of Diseases of the Skin, with Notes and Additions, by J. H. Burgess, M. D.

part. There are, however, some very slight pits now to be seen, but they are very inconsiderable when compared with those on the other arm.

Drs. Goddard and Sargent have since tried the application.

Dr. Sargent used the iodine on one side of the face in twenty-five cases—"the swelling, soreness, and tenderness were very much less than on the sides not covered; each pock remained flattened; but I cannot say that it prevented pitting."

Dr. Goddard writes that he tried the medicine in five cases—"not one of the patients showed the least pit or mark; none of them had been vaccinated, and the disease was confluent in most of them."

One advantage of this treatment, Dr. Jackson remarks, is, "that it removes the cuticle and leaves the part free from those disgusting discolorations which commonly remain for months."

*Medical Examiner, August, 1846.*

[The merit of originality in this matter appears to be due to Dr. Crawford, as appears from the following communication made to the "Montreal Medical Gazette" in 1844:]

A severe case of variola confluenta being admitted into the Montreal Hospital, in the end of September last, on the second day of the eruption, which was attended by considerable tumefaction of the face, the forehead and one cheek were painted with the tincture, the immediate effect of which was to cause a good deal of pain, which, however, subsided in a short time, and appeared in some degree to remove the burning and itching peculiar to the disease; the application of the tincture was repeated daily, with marked good effects, the tumefaction of the face in some degree subsiding, and the pustules becoming flat, as the remedy appeared to abate the violence of this inflammatory action, on the parts to which it had been applied; it was extended over the whole face; a comparative test was therefore not fully instituted; however, the parts most frequently painted formed much thinner scabs than those which had been less so; these crusts fell off sooner, leaving a surface distinguishable by the fewer pits and slighter marks. Although this case was very severe, and terminated fortunately, it was by no means a favourable occasion for experimenting, the eruption having already been two days out, and the inflammation and tumefaction having attained a considerable height, before the opportunity was afforded for using the application; in addition to which, the cautious and sparing manner in which it was used, necessarily limited its effects materially; however, they were sufficiently evident to encourage further trials and warrant its safety.

Shortly after this, a case of variola discreta occurred in the hospital, accompanied with considerable fever and delirium: the patient said he had never been vaccinated; the eruption was profuse but distinct. The tincture was applied over the whole face daily from the first day, for about five or six days. The pustules went through their regular stages, but did not accumulate, remaining flat; and the face did not swell. The thin crusts on the face fell off at about the end of a week, leaving it free from any pitting. The pustules over the rest of the body filled well, and formed thick scabs, which remained several days longer. One of the hands was also painted to show the contrast, and had a very satisfactory result.

The third case was one of variola modificata. In this case the face was at first only partially painted (as was also one hand) to show a contrast: the good effects were soon evident, and the application was then extended over the rest of the face, to prevent any risk of pitting; as the patient was a good-looking young woman; on the parts most frequently painted, the eruption scarcely formed any pus, and the crusts were very thin and soon fell off, leaving the parts free even from discoloration, rendering them for some time distinguishable from the others.

The last case that we shall notice, is most particularly satisfactory, not only from its issue, but also from its being under the care of Dr. G. W. Campbell of this city, with whom the writer frequently visited it. The violence of the febrile symptoms, and extent of the eruption, led Dr. Campbell to suppose that it would prove a confluent case. He ordered the tincture to be applied over the whole face, and on visiting the patient next day, was so pleased with the result, that he directed its application to be made daily; the pustules on the face, although they went through their regular stages, remained flat and small; the face remained free from tumefaction.



faction, with the exception of one of the eyelids, which was slightly puffed. She had no delirium after the application of the tincture; the crusts, which were very slight on the face, fell off early, leaving it free from pitting, while extensive thick and continuous scabs covered the limbs and principal parts of the body; and which confined her to bed many days after those on the face had fallen off, giving her a great deal of uneasiness and discomfort. Throughout her complaint, she said her face was her only tolerable part, and although the tincture gave her pain for about an hour after its application, it quite removed the variolous pain and itching, and left her so far comfortable during the rest of the day.

*British Amer. Med. Journal, Nov. 1846.*

ART. 35.—*Variola, Vaccinia, Varioloid and Varicella*.—Dr. Koesch, the author of an essay published under the above title, concludes:

1. That cow-pock is nothing more than small-pox, transmitted to the cow by contact.
2. That persons who have been effectually vaccinated may, in some rare instances, contract dangerous small-pox.
3. That small-pox after vaccination is, in the great majority of cases, of trifling severity.
4. That the rarity and mildness of small-pox are in proportion to the recency of the vaccination.
5. That small-pox seldom appears after the age of thirty, but is not always less severe when it does so.
6. That the majority of the vaccinated are entirely exempt from small-pox, even though exposed to contagion.
7. The identity of variola and varioloid is demonstrated by their phenomena, development, and by the results of contagion or inoculation.
8. That varicella is in nowise connected with variola, but is a perfectly distinct disease.
9. That vaccination is the only mode of exterminating small-pox.

*Medicinische Corresp. Blatt., and Prov. Med. Journal, Feb. 10, 1847.*

ART. 36.—*The Effect of Hydriodate of Potassa in removing the Stains of Nitrate of Silver from the Skin*. A solution of hydriodate of potassa is found to remove the stains made by nitrate of silver on the skin almost immediately. It is sufficient to moisten the spots several times with a solution of the hydriodate, and then to expose the part to the diffused light of the sun, when the salt of silver is decomposed, being converted into a white ioduret of silver, and thus the black colour disappears. The instance last given of this effect is the removal of the dark stains produced on the eyelids and cheeks of a young woman in one of the Parisian hospitals, by the use of a strong collyrium of nitrate of silver. The same effect has been noticed in this country; for example, the removal, by the same agent, of the olive colour produced on the cornea by the prolonged use of nitrate of silver. We have not yet observed any report of the trial of the internal use of the hydriodate of potassa for the purpose of removing the dark metallic hue given to the exposed parts of the surface by the internal use of nitrate of silver. If it be found to have this effect also, the fact will be of the utmost value in practice, as giving to the profession a more extended freedom in the employment of a most valuable remedy in many diseases. It is hardly to be expected that the external application of the solution of the hydriodate will produce much benefit in the latter case; but even in this form it deserves a trial.

*Med.-Chirurg. Review; Lancet, Nov. 28, 1846.*

ART. 37.—*Pathology of Urticaria*. Dr. Douglas McLagan has surmised, from the result of a chemical examination of the urine in one case, that urticaria depends upon the non-elimination of urea from the system. In the case in question the proportion of urea was diminished by one half, the total quantity of urine being at the same time not increased. Under the impression that as in rheumatism, in which an analogous condition exists, colchicum is known to be useful, it was exhibited in the above case, and with the best results, as the next examina-

tion proved the urea to have been increased nearly threefold. At the same time the cutaneous irritation entirely subsided.

*Edin. Month. Journal; Lancet, Aug. 8.*

## SECT. VIII. VARIA.

ART. 38.—*On the Diseases arising from the Injurious Action of Mercury.*

By W. PORTER, M. D., F.R.C.S.I., &c.

(*Dublin Medical Press, Feb. 10, 1847.*)

[Dr. Porter observes:] I think that mercurial diseases, properly so called, that is, such as arise from mercury alone, admit of subdivision into two classes, according as they seem to be the products of a small or a large dose of the poison; when taken in small quantity it appears to be determined to the tegumentary structures, the skin, the mucous membranes, and analogous tissues, such as the conjunctiva of the eye, and therefore bowel complaints, cutaneous eruptions, and superficial inflammations are generally met with at an early period and before the specific effects of the medicine ought to be expected to appear; when taken in large quantities, the nervous system is that most likely to suffer, and that too whether the specific effects have not been developed at all, which is the case most pregnant with danger, or that being present and in full operation, they have been suddenly checked, or otherwise interfered with, by improper or incautious exposure. Some few cases occur whilst the patients are under complete salivation; but it is so difficult to say that such may not have been guilty of some irregularity, that they may be placed within the latter category, and at all events they are of rare occurrence. Such is the arrangement I propose to follow in considering these affections, not, however, without being conscious of its imperfections, and that numerous diseases arise, or seem to arise, from the irritation of mercury that run a wild and unbridled course, which it would be impossible in the present state of our knowledge to subject to this or almost any classification. Persons, for instance, whilst taking mercury, occasionally become deranged;\* the examples of this which I have seen were all maniacal, and the symptoms such as might be expected from inflammation of the brain or its membranes: they all died. Whether such an event was the result of exposure to wet or cold—whether it could be regarded as a kind of metastatic transfer of the mercurial irritation to the brain—or whether it had any direct connexion with the mercury at all, I am unable to prove; but certainly at the time when each occurred, I could not avoid placing the mercury and the madness in the relation of cause and effect. Again, persons whilst taking mercury have become paralytic. When I was in college, a young friend of mine, slightly under the influence of the medicine, was exposed to an incessant shower of rain for nearly two hours; he went to bed, where he had a rigor, but fell asleep, and awoke perfectly paralytic of one side. He lived many years afterwards, but never recovered the use of his limbs. A young clergyman, who had taken mercury for a liver complaint, and had apparently nearly recovered from its effects, incautiously fell asleep on the grass; he awoke paralytic, and never recovered, although he lived to more than a middle age. Perhaps it may be said that these are not fair specimens of the morbid influence of mercury on the nervous system; perhaps it may be doubted whether mercury had any relation to such cases at all, inasmuch as persons have become paralytic from exposure who had never taken a grain of the medicine. I know not. My opportunities of investigation have been too limited to enable me to speak with confidence on a subject of such extreme obscurity; but my experience in many instances has led me to believe that mercury may prove eminently mischievous in this particular manner. But suppose we acknowledge that mercury may and does act injuriously on the nervous system in all its parts and in various ways, how are we to account for its prejudicial influence on other systems and structures,

\* Multis ad vertiginem, quibusdam ad insaniam usque infestabatur cerebrum.—*Ulrich de Hutten.*

particularly as to its production of an hemorrhagic tendency? Several years ago, when investigating the pathology of aneurism, I remarked the frequency of that disease in persons who had been subjected to protracted courses of mercury, and I then hazarded an opinion that this fearful and dangerous affection might be occasionally thus induced; since, I have paid great attention to the subject, and have observed different kinds of hemorrhage so frequently ensue in a very short time after mercury had been extensively used, that I feel convinced of its injurious influence in this respect. Almost all the aged people treated with mercury for syphilis have, according to my observation, died shortly afterwards of hemoptysis or apoplexy; nor are such casualties confined to the aged, for I have seen several instances of young persons under similar circumstances being seized with spitting of blood, and dying rapidly of consumption. It may be imagined that I am pushing the possibly injurious effects of mercury too far, and that my apprehensions on this head, as being derived from the experience of a few cases, are little more than visionary; be it so; but having remarked the fact, I think it my duty to state it, and leave it to be established or contradicted by future experience.

[The tendency of mercury to induce an hemorrhagic condition is readily explicable by the effects of the mineral upon the fibrin of the blood. Ed.]

*Diarrhœa.* But to return to the subject more immediately before us. The injurious, or perhaps in this instance it would be sufficient to say the unpleasant, effect of mercury with which surgeons are most familiar, is where it acts too violently on the bowels, and this may occur under different circumstances, producing various degrees of distress. Sometimes when it is the object of the practitioner to bring the system rapidly under the influence of the medicine, the first large dose administered acts as a smart purgative, and is uncomfortable to the patient, although seldom prejudicial in its effects; neither does it require medical interference unless the purging continues too long, or shows a tendency to degenerate into dysentery. Sometimes the hasty or thoughtless administration of even a moderate quantity of mercury, without previous attention having been paid to the state of the digestive organs, produces a similar effect, but however troublesome, I cannot regard this as an unfavourable occurrence either. But it by no means unfrequently happens that the bowels become more seriously engaged, particularly if the patient has been irregular in diet, or indulged in improper food. In these cases the affection assumes a dysenteric character, is extremely annoying, and occasionally, though not very frequently, difficult to be controlled. The patient has at first a tolerably copious discharge from the bowels, mixed with air, and accompanied by some slight and wandering pains, resembling colic; this is succeeded by frequent evacuations of a thin, yellow, frothy substance resembling yolk of egg, sometimes streaked or mixed with blood, attended with great pain in the abdomen, especially at the navel, and soreness and tenderness about the anus. The attempts to evacuate the bowels may amount to forty or fifty, or even more, in the twenty-four hours—I have seen the tenesmus and straining almost constant. This, I need scarcely say, is a most harassing affection, but is seldom of dangerous consequence, and is usually checked by opium, combined with castor oil, or with some aromatic aperient. In some cases it may be necessary to administer opiate enemata, and in all where there has been soreness or irritability about the anus, I have procured the most sensible relief by the application of a few leeches in that vicinity. This is sufficient in the majority of cases, but if the affection should proceed to confirmed dysentery, it must of course be treated accordingly.

*Erythema.* But the injurious effects of mercury are of more importance when they seem to be determined to the skin, constituting the mercurial eczema, lepra, or erythema, for by each of these names has the disease been called. This is always unpleasant even in its mildest form, but may by neglect assume so formidable a character that one may well feel surprise how it could have existed as it must have done, assumed such a constancy and regularity of feature, and committed such ravages as it still will do if not interrupted in its career, without having attached more attention at a very early period. At present the disease in its advanced forms is very rare: we meet with its early symptoms very frequently, but seldom with those distressing characters that mark its exacerbated state, and never unless in the person of some unfortunate victim of quackery, in whom



mercury has been pushed to an extent that an ignorance of the mischief it was working, could alone account for.

Mercurial erythema is sometimes preceded by symptoms resembling those which usher in an attack of erysipelas, shivering, nausea, foul tongue, thirst, headache, cough, and pains about the præcordia, and these febrile symptoms not only continue throughout, but in severe cases become daily aggravated: sometimes it occurs without any premonitory notice, except a harsh dryness of the skin; and I have known it appear suddenly on the day after the administration of three or four grains of calomel as a purge. It may be a consequence of the use of mercury in any of its forms or preparations, but seems more frequently produced by its administration internally. I have, however, seen an exceedingly well-marked case of it from dressing a sore with the red precipitate. It appears as a dark red blush at some of the folds of the body, the root of the scrotum, the groins, axillæ, or anterior parts of the elbow, from which it spreads with a greater or less degree of rapidity, according to the severity of the case. This blush is distinguished from ordinary erysipelas by its surface being slightly rough to the touch—by its edge not being distinctly defined—by its intolerable itching, which is the local inconvenience chiefly complained of in the first instance.—and by its vesicular appearance, when viewed through a magnifying-glass. Wherever the surfaces of the body lie in opposite contact, such as in the perineum, the inside of the thighs, or betwixt the folds of the nates, these vesicles break almost as soon as formed, the parts become abraded, and there is a constant oozing of a serous fluid, foul and abominably fetid. In modern times the disease seldom progresses beyond this, which may be termed the first stage; but suppose it neglected, and the use of mercury still persevered in, the febrile symptoms become exasperated, the eruption spreads, and may so extend as to occupy the entire body, and the vesications, or rather vesicles, run into each other and break. Where surfaces are opposed, the discharge increases in quantity, assumes a puriform character, and becomes, if possible, still more offensive: where they do not, a branny scurf or thin scale is formed, which falls off, and is renewed so abundantly that after the night, or even after a few hours, a vast quantity may be found in the patient's bed. In general this desquamation of the skin is attended with an abatement of the febrile symptoms, and the patient slowly recovers; but if otherwise, if the disease has been more than usually malignant, or if the medicine has been still persevered with, the parts engaged (and these may be the entire body) swell, apparently by the formation of thicker scabs or crusts which are deeply cracked or fissured (not inaptly compared to the scored skin of roasted pork), discharging sometimes sanies, sometimes blood, and so sore and painful that the patient can scarcely bear to turn himself in his bed. I am not quite certain that I ever saw a fatal case of mercurial erythema.\* About five years ago a poor Scotchman was brought into hospital covered with a scurfy eruption, and in a miserable state of debility, who attributed his illness to his having taken some medicine, which he believed to have been corrosive sublimate, for the cure of a clap. In despite of every care he died (as several thought) of this disease, but if it was so, there was a symptom present not hitherto described as appertaining to it, namely, a discharge of purulent matter as foul and offensive as that from the nostrils of a glandered horse, from every mucous outlet of his body, mouth, nostrils, eyes, ears, anus, and urethra. I know not, I say, whether this was a specimen of the disease or not: but without passing to such extremity, the description given by those who had witnessed the latter stages of the malignant erythema is sufficiently appalling. "The cough becomes very severe, and is accompanied with great soreness of the chest; the matter expectorated is sometimes highly tinged with blood, which is so coagulated as to threaten suffocation. The pulse is frequent and irregular; the surface of the body continues intensely hot and sore: the thirst becomes unquenchable; the tongue grows parched and black in the centre; and the urine is high-coloured, small in quantity, and without sediment.

"Wretched, indeed, is the situation of the patient in this stage of the disease. Without the enjoyment of one moment's repose, afflicted in body with the most

\* Pearson states that he never saw an instance in which the disease proved fatal.—*On the Eczema Mercuriale*, p. 172.

excruciating anguish, and depressed in mind to the last misery of despair. he soon falls beneath this complication of wretchedness. Diarrhea and low delirium speedily supervene, the pulse sinks, the body mortifies, and a state of insensibility at length announces the termination of a complaint that exhibits at once a distressing proof of the inefficacy of medicine and the insufficiency of human skill."

Before I speak of the treatment, allow me to revert for a moment to the history of this affection. Alley states that "before the nature of this disease was known, it was considered as a more virulent species of *syphilis*. In proportion, therefore, as the disorder advanced, mercury in some form or other was exhibited in greater quantity. The fever, consequently, was soon found to be increased to an alarming degree by the action of mercury, thus heaped on an already overloaded system; and lest the patient should sink too rapidly under the oppression of this fever, recourse was had to tonics and stimulants. Among these, the bark and wine were resorted to without any regard to symptoms and appearances. It is almost unnecessary to add that the disease was in every instance dreadfully aggravated, and that very few recovered." Now, recollect that this happened in a Lock Hospital, and at a time when all venereal patients were treated with mercury. The patient was surrounded by and actually breathing a mercurial atmosphere, and you can easily understand why medicine and medical skill were inefficacious and insufficient. It was useless to prescribe purgatives, and acids, and antimonials, and other cooling medicines, the cause of the fever remaining ever present; it was vain to endeavor to support the strength by bark, and wine, and opium, whilst the tendency to putrescence was constantly on the increase. At present the disease is known to be mercurial. The moment the first blush of eruption is seen, and the itchiness complained of, the patient is removed to another ward, his clothes changed, even to the minutest article, everything mercurial banished, and this is generally found to be sufficient without further medical treatment. If not, and the disease refuses to yield on the removal of the exciting cause, it may be necessary to free the bowels by some saline aperient, to remove the dryness and heat of the skin by a warm bath or two, and by the internal use of some of the acids, and to promote perspiration by antimonial medicines: but in the cases that I have had an opportunity of observing from the commencement, I have never seen one in which I was called on to support the strength or obviate typhoid symptoms by bark, or wine, or opium, or medicines of that class. I cannot imagine the occurrence of an aggravated or dangerous case of mercurial erythema unless as a consequence of the grossest ignorance or most unpardonable neglect.

This is the only cutaneous affection described as arising from the injurious effects of mercury, for I attach no importance to the pustular eruption that appears on the parts into which the ointment has been rubbed, this latter being merely the result of a local irritation, and withal not affording any indication that the medicine is disagreeing with the system; yet I am by no means certain that the skin may not present other forms of eruptive disease besides this one of erythema. I have seen a miliary eruption, accompanied by most appalling debility, in three different females, who had taken mercury for the cure of dropsy, and here are drawings taken from two men, who were covered with blotches of a bright scarlet color, and who attributed the disease to having taken corrosive sublimate for a quack. One of these died in this hospital, in a few days after admission, of uncontrollable hemorrhage from the lungs; the other recovered under the use of the mineral acids. I know not whether any of these eruptions were actually caused by mercury, or can be fairly arranged amongst its injurious or poisonous effects; all I can be certain of is, that these symptoms appeared during or after the use of the medicine, and seemed to be connected with it, inasmuch as they derived benefit from measures such as would have been adopted in genuine mercurial affections. I merely mention them as showing how very little is positively known respecting this formidable class of diseases, the uncertainty every practitioner must feel, the difficulty he must experience in treating them, and the necessity there exists for a diligent and careful investigation of them whenever and wherever opportunity may offer.

*Mercurial Ecthymus.* Mr. Pearson tells us that in the course of two or three years after his appointment to the Lock Hospital, he observed that in almost every year one or two cases of sudden death occurred among the patients; that these



could not be traced to any ostensible cause, and that the subjects were men who had nearly and sometimes entirely completed their mercurial course. He consulted Messrs. Bromfield and Williams on the subject, and they were unable to give him any information more than that they had carefully examined the bodies of many who had thus died unexpectedly without being able to discover any morbid appearances. On watching the effects of mercury on the patients, he ascertained that these deaths were attributable to the mineral acting as a poison on the system, and that its deleterious qualities were neither in proportion to the inflammation of the mouth nor to the actual quantity of the mercury absorbed into the body. Such is the first notice of the mercurial erethismus as given by its discoverer, a notice supposed to be so perfect that it has been adopted by almost every writer on the subject without alteration and without improvement, and yet so vague as to be liable to great misapprehension. It states, for instance, that the subjects had nearly or entirely completed their mercurial course, and that the poisonous qualities of the mineral were irrespective of the quantity taken, or its effects on the mouth. Now, the obvious meaning of this is, that persons whose mouths had been made sore, that is, persons on whom the mercury had produced its specific effects, were liable to be attacked by its poisonous effects also at one and the same time, and thus that the salivation which we are anxious to produce and regard as the surest indication that the mercury is developing its sanative qualities, is no guarantee that it is not exerting its poisonous powers also. This position seems at first sight eminently absurd; it represents the medicine as operating in two opposite directions at once, and, if true, would deprive the practitioner of all confidence in it, because, although a case might be progressing, to all appearance, favourably, he could not know the minute it would take an unfortunate turn and lead to a calamitous result: for this reason, and because it involves the etiology of a most important and dangerous affection, the point requires some further examination. It is well known that mercury, gradually and gently introduced into the system, gradually and gently affects the mouth and induces salivation; this is the natural effect of the medicine, and when present, we calculate almost to a certainty on the exertion of its sanative properties. The late Professor Colles, than whom no man possessed a greater share of practical experience, took this view of salivation, regarding its presence as the great safeguard against all accidents; present in the occurrence of mercurial diseases, and future in the appearance of secondary symptoms. As to the value of salivation as "a crotchet," in this opinion the author fully and entirely participates. But if a great deal has been given "without in the slightest degree touching the mouth or tainting the breath—or, on the other hand, if a very small quantity, say a few grains of calomel, excites a furious salivation, these are *not* the ordinary or healthy effects of the medicine, and in either case it is quite possible that any injurious property it possesses may be brought into play. Thus a monstrous quantity of mercury may be the apparent exciting cause, or a very small, acting the part and producing the effects of a large quantity, may have a similar result, and so far the occurrence of the disease seems independent of the quantity actually taken and the degree of salivation induced, with this qualification only, that one or the other is generally excessive. When the effects of mercury on the salivary organs are gradually evolved, the surgeon regards the event as most satisfactory, and on these effects being maintained for a given time he calculates his patient's safety both for the present and the future: but if they are not evolved at all, or being induced, either suddenly cease or become too violent, or break out in sloughy gums and putrid jaws from an apparently trifling dose, I imagine no practitioner would ensure his patient from a future recurrence of the disease any more than he could divest his own mind of the apprehension of present danger. It is, however, generally the administration of a large quantity of mercury that produces erethismus, and when we recollect the manner in which this medicine was used in Pearson's days, that enormous doses were given, and if they did not act, that more was still added in order to force its operation, we can readily understand that most of its victims were men who had altogether or nearly completed courses that ought to have cured them of any syphilitic taint.

The next point to be considered is the pathology of this affection, and here morbid anatomy affords but little assistance. Bromfield and Williams could detect no



morbid appearance, and, as far as I know, a similar result has attended all investigations since. I have never seen a patient die of erethismus that I recollect; certainly, I never had an opportunity of examining one after death, and in referring the affection to the nervous system, I am influenced entirely by the symptoms during life. But the question is of little importance, and daily becoming of less. Happily the disease is of rare occurrence; when present it is by no means difficult of recognition, and when recognized, the principles of treatment are well established. The most successful pathological investigation could scarcely have accomplished more.

There seems to be some doubt whether this disease ever affords premonitory signs of its approach, and on this head I am not qualified to speak very determinedly; but I know I have frequently stopped the use of mercury with patients through apprehension when I have seen them take a larger quantity than ought to have been sufficient without any specific effect; when they have lost flesh, become pale, anxious, irritable, and sleepless, and above all, when any trifling exertion caused palpitation. Mr. Pearson says that "the gradual approach of this diseased state is commonly indicated by paleness of the countenance, a state of general inquietude, and frequent sighing; the respiration becomes more frequent, sometimes accompanied with a sense of constriction across the thorax; the pulse is small, frequent, and intermitting, and there is a sense of fluttering about the præcordia." When such symptoms were present I should say the disease was fairly formed, for the foregoing passage differs but in slight degree from that which contains a full description of it. "Erethismus," says our author, "is characterized by great depression of strength, a sense of anxiety about the præcordia, irregular action of the heart, frequent sighing, trembling, partial or universal, a small, quick, and sometimes an intermitting pulse, occasional vomiting, a pale contracted countenance, a sense of coldness; but the tongue is seldom furred, nor are the vital or natural functions much disordered."

"When these, or the greater part of these symptoms are present, a sudden and violent exertion of the animal power will sometimes prove fatal. For instance, walking hastily across the ward, rising up suddenly in the bed to take food or drink, or slightly struggling with some of their fellow-patients, are among the circumstances which have commonly preceded the sudden death of those afflicted with mercurial erethismus."

The treatment of this formidable affection consists in the total abandonment of mercury. No matter the disease or stage of the disease for which it was employed—no matter the apparent urgency of symptom, or violence, or extent of threatened evil; that which is impending is still more urgent and still more threatening, for it involves the sudden and instantaneous loss of life. The patient, then, should be moved into another chamber, large, airy, and capable of free ventilation; his clothes, even to the minutest article, changed, and everything mercurial carefully removed. Dr. Colles recommends, that he should be exposed in the horizontal posture, to the free, open air, *both during day and night*; adding, that no apprehension need be entertained of any of those injurious effects which exposure to cold so commonly induces. Pearson says that it will not be sufficient to sit in a room with the windows open; he must be taken into a garden or a field, and live as much as possible in the open air. All seem to agree as to the value of free exposure to a cool dry atmosphere. Mild stimulants have also been recommended with a view of supporting the patient's strength, together with the most perfect quietude both of body and mind, and under this treatment, together with the occasional use of the warm bath, there seems to be little doubt of a speedy recovery.

#### ART. 39.—*On the Use of Opium in Inflammation.*

By W. H. RANKING, M. D., late Physician to the Suffolk General Hospital.

(*Provincial Med. and Surg. Journal*, March 10.)

The legitimate sphere of action of *opium*, in the treatment of inflammatory diseases is, we conceive, a point upon which our notions have arrived at tolerable precision. Under whatever modifications of individual circumstances attending such diseases the beneficial action of opium is observed, one well-marked mor-

bid condition has, according to my observation, existed in every case, and that is an excitement of the nervous system, altogether disproportionate to the exaggeration of vascular action. This excitement is not shown in the existence of spontaneous pain alone, as we know that that symptom may be insignificant, or altogether absent, in instances of the most extensive and destructive inflammation; neither is it shown mainly by increased sensibility to local impressions. The excitement to which I allude, exhibits itself in disorders of the sensory and motor functions of the nervous system chiefly, and consists in watchfulness, or transient delirium, irregular respiration, and especially in restlessness and jactitation. In this condition of things, whatever be the violence of the local inflammation, or whatever organ be affected (excepting the brain in some instances), opium is imperatively called for. In other words, whenever, during the existence of inflammation, symptoms indicative of a loss of balance between the nervous and vascular systems exhibit themselves, sedative medicines are demanded in doses proportionate to the nervous preponderance.

This want of balance declares itself, I believe, chiefly under two conditions—1st. the existence of inflammation in a constitution naturally excitable, or in which the general powers have been reduced by the disease itself, by treatment, or by contingent circumstances relating to food, air, &c.; and, 2d, in inflammation of organs or tissues, the implication of which, induces a state of things more or less approaching to that condition which, for want of a better term, we are in the habit of calling *shock*. In illustration of the first division, we may mention inflammation occurring in the hysterical constitution. In these cases, the phenomena which depend upon irritation of the nervous centres, take so decided a lead in the symptomatology of the case, that until they are controlled by opium, or some, under certain circumstances, more appropriate sedative, the inflammatory symptoms proper do not display themselves with their characteristic features. Again, inflammation may attack an ill-fed or previously debilitated individual; or the inflammation may have been too actively combated by bloodletting, mercury, &c., without reference to the deficient resiliency of constitution, which, in children, more particularly, may lurk behind an appearance ostensibly robust. In these cases there may exist from the first, or there comes on assuredly at no distant period, a condition in which opium becomes necessary to save life, to prevent, in fact, in the latter case, the anomaly of the patient “dying cured.”

Under the second class of cases in which opium becomes a necessary part of the treatment, or is even mainly to be relied on, is inflammation of an organ or tissue largely supplied with ganglionic nerves, and in which, for this reason, the nervous system requires a large share of attention in the treatment of the case. Such is peritonitis or enteritis, either idiopathic or secondary; such are, also, one form of delirium tremens, diffuse cellular inflammation, and more particularly, phlebitis, the inner membrane of veins having the closest analogy to serous membrane in many respects, but especially in its large supply of organic nerves. In all these inflammations, the usual battery of antiphlogistics is worse than useless, unless combined with the liberal exhibition of opium.

The symptoms either existing *ab initio*, or, as is more commonly the case, coming on in the course of the disease, which indicate the necessity for opium, can only become familiar to the practitioner by clinical observation; but as far as written descriptions can be relied upon, it may be stated, that the broad expression of this condition consists in a failure in the power or regularity of the pulse, pallor of the countenance, moist skin, (but not in all cases,) tendency to incoherence, with restlessness, sleeplessness, and, in an aggravated form, jactitation. This is the broad outline, so to speak, of the state referred to, but it declares itself in minor degrees, with which experience alone can render us familiar, and the appreciation of which is in itself sufficient, in many cases, to make the difference between a successful and an unsuccessful practitioner: for to persevere in antiphlogistic treatment, or to withhold opium, when these indications offer themselves, is to destroy the patient.

In the exhibition of opium when these symptoms show themselves in inflammation, I know of no drawback,—no contra-indication which should weigh for one moment against its paramount necessity. Be the skin sweating or dry, the tongue moist or dry, the bowels constipated or not, opium must be given. The consti-

pated bowels, which are regarded by some as inducing the necessity for hesitation in the use of the medicine, I look upon as of the least importance in the generality of inflammations; in some, as in enteritis, a quiescent state of the bowels is even needful: and were it not so, the probability is, that if the case has been properly managed at first, such a clearance will have been effected as will render any risk from accumulation comparatively small.

[On the same subject Dr. Durrant observes:]

"The treatment of internal inflammation by opium," is an important practical subject, and one which I trust that we shall sooner or later see discussed in the pages of the '*Provincial Journal*,' by not a few only of its many talented contributors. Without entering upon the theory of the action which opium exerts upon healthy and diseased organs, I can most fully assent to the opinions which have been recently expressed by Drs. Chambers and Ranking, in reference to its utility in the treatment of many cases of acute internal inflammation. The power of allaying pain, subduing nervous excitability, and thereby reducing the irritability of the heart's action, peculiarly belongs to this drug; and however difficult or impossible it may be to instance, by writing, those particular conditions in which its adoption is so generally followed by benefit; still, how vividly will the reflecting physician, unshackled by hypothetical notions, revert to the satisfactory results which in his hands have attended its use.

In the selection of the cases most requiring the opium treatment, as also the precise period at which this medicine is called for, (and this is all important,) medical tact and observant experience can alone direct. A volume upon the subject would, in many instances, utterly fail to indicate the peculiar circumstances requiring opium, but in which to give it is recovery to the patient,—to withhold it is probable destruction; and who cannot call to mind the look of gratitude beaming in the countenance of the sufferer relieved, if not rendered out of danger, by the timely and judicious exhibition of this valuable drug? Independently of those diseases in the treatment of which opium is commonly prescribed, as delirium tremens, and some other nervous affections, there exist others, in which at one period or other of their course, the exhibition of opiates is attended with the happiest results.

In the second stage of pneumonia, if the cough be constant and harassing, the expectoration scanty, and the countenance anxious, with an exalted state of nervous sensibility, full doses of opium at bedtime often act like a charm. In pleurisy, prior to effusion, the same medicine administered at night, giving mercury *per se* during the day, is equally valuable. If effusion obtain, the balance of the circulation is often so much interfered with, that the propriety of opium, in these cases, becomes questionable. In rheumatism, the best effects result from opiates; but in this disease, as in pleurisy, I believe that more benefit will be derived from administering opium in full doses at night, with mercury during the day, instead of the more common practice of combining the two remedies. In croup, also, in lymphatic children, after the urgency of the symptoms has abated, opium to prevent spasm is often imperatively called for. In peritonitis, enteritis, diarrhœa, and dysentery, opium judiciously used is invaluable.

The forms which I myself prefer are the crude opium and the muriate of morphia.

In reference to the constipating effects of this drug upon the bowels, I do not regard it as any reason for withholding its use. In enteritis and peritonitis, it becomes often of paramount importance, while allaying pain, to ensure quietude in the intestinal tract; and not unfrequently shall we find obstinate constipation attended with, and perhaps produced by, spasm, effectually relieved by the free administration of opium. Within the last few weeks, I have witnessed the most decidedly beneficial result obtain from the exhibition of opium, in strangulated irreducible hernia, for the relief of which neither the patient (a female, aged 64) nor her friends would sanction an operation. After all other measures had been adopted by the surgeon in attendance, without avail, and repeated stercoraceous vomiting taking place, a grain of solid opium was administered every two hours, with the effect of not only allaying the vomiting, but also (after half a drachm had been taken) of inducing free and repeated evacuation of the bowels, which function had not



previously been performed for fourteen days. The patient, although relieved from the consequences of the hernia, ultimately sank from exhaustion, the friends pertinaciously refusing a *post-mortem* examination.

In thus briefly advocating the powers of opium in the treatment of internal inflammation, I must again repeat, that it is clinical observation alone that will suffice to demonstrate, in many instances, the particular time and circumstances by which its exhibition must be regulated. When calculated to benefit, the relief which it affords is often immense, while, on the contrary, if given under disadvantageous conditions, its injurious effects may be irreparable.

ART. 40.—*On the Diseases arising from the Immoderate Use of Tobacco.*

By THOMAS LAYCOCK, M. D.

(Reported in *Medical Gazette*, Oct. 2, 1846.)

In our first volume, p. 92, we have republished a paper containing the experience of an American practitioner, in reference to the ill effects of excessive smoking and other use of tobacco; and as the increasing use of the plant in this country renders any information upon its hygienic properties of considerable interest, we shall continue the subject by a recapitulation of the leading features of a communication laid before the last meeting of the British Association, by Dr. Laycock, of York.

The consequences of inveterate smoking are investigated as they declare themselves in the mucous membranes of the mouth and pharynx, in the stomach, lungs, heart, and nervous system. In the first of these, the simplest result of excessive smoking, is stated to be an inflammatory condition of the mucous membrane of the lips and tongue; the tonsils also become swollen, and if the throat be examined, it will be found slightly swollen with congested veins, and streaked with mucus. The irritation extends from this part up the posterior nares, giving rise to a sensation of dryness and tickling, with discharge of thick mucus. The conjunctiva also becomes the seat of heat and redness, with lachrymation and a peculiar spasmodic action of the orbicularis muscle, which the author states is observed on awaking in the morning.

The frequent occurrence of a dull pain in the forehead after excessive smoking, leads the author to suspect that the frontal sinuses are also affected; but these effects are trifling in comparison with the consequences which are manifested in the digestive canal. [Upon this branch of his subject the author's observations are not so diffuse as our own experience of the effects of tobacco would have led us to expect, and we therefore refer our readers to the article in our first volume just alluded to, in which the peculiar derangement of the digestive organs will be found to be minutely laid down.] These are described to be pain on pressure in the epigastrium, anorexia, nausea on taking food, with constant desire to expectorate.

The action of the heart and lungs is impaired by the influence of the narcotic on the nervous system, but in addition to this, a morbid state of the respiratory passages is induced by the direct application of the smoke; the voice is hoarser, and a short cough arises; in one case the author thinks he has seen ulceration of the cartilages of the larynx ensue, and further states, that inflammation and ulceration of the larynx in men are almost exclusively peculiar to inveterate smokers.

Hemoptysis is another affection described as distinctly traceable to the habit of smoking, but the author is not able to determine whence the blood is discharged, but it is brought up by "hawking" rather than coughing. [Probably from the relaxed condition of the pharynx which he mentions above.]

The abuse of tobacco on the heart is depressing. The individual usually complains of a peculiar uneasy sensation about the left nipple, amounting almost to faintness. In such an example no morbid sound can be detected, but the action of the heart is feeble, and sometimes irregular. An uneasy feeling is also complained of beneath the pectoral muscles.

On the brain the action of tobacco is sedative. It appears to diminish the rapidity of cerebral action, and to check the flow of ideas. This the author thinks is a certain result, and he believes that it is for this reason that smoking is a com-

mon habit with studious or contemplative men. The action is different from that of other narcotics, as it does not dispose to sleep, but, on the contrary, excites watchfulness, and in this respect resembles the effect of green tea. Among the secondary results of smoking, the author mentions constipation and hemorrhoids, acne, blackness of the teeth, and gum-boils; there is also a sallowness of the complexion, and a want of life and energy; the author is not able to confirm the opinion that it impairs the sexual powers.

[Dr. Laycock's communication concluded with some remarks upon the physiological properties of tobacco, by Dr. Wright, of Birmingham, which are chiefly to the following effect.]

The action of tobacco is precisely similar in man and animals. A watery infusion of the plant, in whatever manner administered, produces in all cases a decidedly sedative action upon the nervous system. The feebleness of the heart's action so commonly observed, is due to this nervous depression, and is not induced by the independent action of the drug upon it. The essential oil of tobacco produces all the effects of the infusion. When given in small quantities, from two to five grains, twice or three times a day, mixed with food, tobacco in dogs induces gradual and complete marasmus. Dr. Wright has remarked in particular a dragging action of the hind legs, and a loss of venereal power; the testes become soft and shrivelled, the hair falls off, and before death sloughing of the eyelids, and blindness, generally ensued. After death the blood was invariably found fluid, deficient in fibrin and red globules.

In watching the effects of excessive use of tobacco in the human subject, Dr. Wright believes that they are precisely similar to the physiological effects above mentioned. He has observed that the nervous system especially suffers, that there has been an obtuseness of the several senses, irritability, indecision, loss of courage, weakness of muscular action, and depraved secretions. He has also commonly noticed the condition of the buccal and pharyngeal membrane alluded to by Dr. Laycock, as well as the deepened intonation of the voice. He considers it as a great antagonist of the functions of the nervous system, especially in its relation to the organs of sense, reproduction, and digestion. He has known it produce a state of complete atony. He has known many cases, on the other hand, in which no harm resulted from the use of tobacco, but is not aware of any good arising from its use that could not be obtained from less objectionable means.

ART. 41.—*Successful Method of arresting the Bleeding from Leech-bites.* Dr. Marshall, of Belfast, communicates the following: "When a leech-bite bleeds profusely, and compression cannot be made, as over the neck, abdomen, &c., he wipes it quickly with a piece of lint, and seizes the integument surrounding the bite with the finger and thumb of one hand, and makes moderate pressure. It is sometimes necessary to repeat this process several times, but ultimate success is certain. Dr. Marshall was first led to adopt this plan in the case of a lady labouring under peritonitis, who had several leeches applied to the abdomen, the bleeding from which was so great as to endanger her life, and had resisted the application of caustic, &c." The editor of the "Dublin Quarterly Journal" bears testimony to the value of the above suggestion of Dr. Marshall.

*Dublin Quarterly Journal*, Nov. 1846.

M. Morand recommends the application of a mixture of six parts olive oil and two yellow wax. This is to be spread in a thin layer over the bites previously wiped dry.

*Brit. and For. Med. Review*, April, 1847.

## PART II.

# SURGERY.

---

### SECT. I.—SYMPTOMATOLOGY AND DIAGNOSIS OF SURGICAL DISEASES.

ART. 42.—*The Diagnosis of Fracture seated about an inch and a half above the Carpal Extremity of the Radius.* By Dr. COLLES.

(*Dublin Quart. Journ.*, Nov. 1846, p. 441.)

LET the surgeon apply the fingers of one hand to the seat of the suspected fracture, and locking the other hand in that of the patient, make a moderate extension, until he observes the limb restored to its natural form. As soon as this is effected, let him move the patient's hand backward and forward, and he will, at every such attempt, be sensible of a yielding of the fractured ends of the bone, and this to such a degree as must remove all doubt from his mind. The nature of this injury once ascertained, it will be a very easy matter to explain the different phenomena attendant on it, and to point out a method of treatment which will prove completely successful. The hard swelling which appears on the back of the hand, is caused by the carpal surface of the radius being directed slightly backwards, instead of looking directly downwards. The carpus and metacarpus, retaining their connexions with this bone, must follow it in its derangement, and cause the convexity above alluded to. This change of direction in the articulating surface of the radius is caused by the tendons of the extensor muscles of the thumb, which pass along the posterior surface of the radius in sheaths firmly connected with the inferior extremity of this bone. The broken extremity of the radius being thus drawn backwards, causes the ulna to appear prominent toward the palmar surface, while it is possibly thrown more towards the inner, or ulnar side of the limb, by the upper end of the fragment of the radius pressing it in that direction. The separation of these two bones from each other is facilitated by a previous rupture of their capsular ligament, an event which may readily be occasioned by the violence of the injury.

ART. 43.—*The Diagnosis of Ovarian Hernia.* Lassus regarded as a pathognomonic sign of ovarian hernia a correspondence between the motions given to the uterus by the finger, introduced through the vagina or rectum, with those felt in the tumour by the patient or by the surgeon.

(*Archives Générales*, Sept. 1846, p. 96.)

ART. 44.—*The Diagnosis of Hernia and Varicocele.* Varicocele is more frequently than any other disorder mistaken for hernia, for when large it dilates upon coughing, and swells in the erect, and retires in the recumbent posture of the body. There is only one sure method of distinguishing the two complaints: place the patient in a horizontal position, and empty the swelling by pressure on the scrotum; then put the fingers firmly upon the upper part of the abdominal ring and request the patient to rise: if it is a hernia the tumour cannot reappear so long as the pressure is applied at the ring; but if it is a varicocele, the swelling returns with increased size, owing to the return of blood into the abdomen being pre-



vented by the pressure.—*Prov. Med. and Surg. Journal*, Dec. 30, 1846. [This test was recommended and practised by Sir A. Cooper.]

ART. 45.—*Psoitis*. Inflammation of the sheath of the psoas muscle is distinguished from inflammation of the cellular tissue in the internal iliac fossa, by the involuntary flexion, in the former, of the thigh upon the abdomen. This symptom was characteristic in a patient affected with psoitis in the ward of M. Rayer, amidst others labouring under pelvic abscess. Sometimes the two diseases co-exist. The first is perhaps the less frequent, but the more serious affection.

*Annales de Thérapeutique*, July, 1846.

ART. 46.—*On the Diagnosis and Treatment of Rupture of the Tendon of the Triceps Cruralis Muscle*. By JOHN GRANTHAM, F. R. C. S.

(*London Med. Gazette*, Oct. 16, 1846, p. 670.)

The writer was sent for in the spring of this year to see a medical man, who, in running across a yard, after visiting his patient, was thrown down upon the knee, which instantly deprived him of the power of extending the limb, and was attended with excruciating pain. On examination, he found it almost impossible to extend the leg, the pain being referred to the seat of the inter-articular cartilages of the knee-joint; the pain was excessive round the head of the tibia. He was now induced to consider the mischief to be in the subcutaneous structure on the sides and front of the knee-joint, and ordered hot fomentations of ammonia and water to be constantly applied, which, by the following day, gave great ease to the parts, yet the pain and inability to extend the limb remained. This treatment was continued until the third day, when friction was applied with hot lard and a flannel roller; this also appeared to improve the case, and caused a considerable diminution of pain; nevertheless, on the fifth day the inability to extend the leg remained the same as on the first day. On tracing the tendon of the triceps cruralis, the writer found the separation of the parts, which at once explained the cause of the non-extension of the limb; and here, he remarks particularly, that it is of great importance, when the leg cannot be extended after an injury, to trace with the finger the tendon of the rectus femoris muscle. Although this case did well with proper support, and a moderate use of the leg after the fourteenth day, yet, in justice to his opinion as to the first statement (it must be mentioned that the inflammation was seated in the subcutaneous structure over the region of the tibia), the tenderness did not leave that part without the use of counter-irritants. On further reflection it will be seen how great is the resistance which is required to overcome the power of the flexors of the leg, so that a rupture of so large a muscle as the triceps, would inevitably lead to such a result as the symptom of non-extension of the leg. Ruysen, in the "*Gazette des Hôpitaux*," June 14th, 1845, cites two cases. The accident was produced by the patients falling upon their knees, the legs being violently flexed on the thighs. Dupuytren treated these cases by keeping the limb permanently extended during the union of the parts. The writer advocates partial flexion and extension after the fourteenth day; it will expedite the recovery, and be less painful to the patient. Thick lateral and anterior pasteboard splints applied *wet* with a roller, will be found sufficient to produce approximation of the lacerated parts.

ART. 47.—*The Diagnosis of Luxation and Fracture of the Head of the Humerus*.  
By the late BARON DUPUYTREN.

(*On the Injuries and Diseases of Bones*. Translated by F. Le Gros Clark, 1847, p. 74.  
Condensed.)

[Dupuytren describes the case of a woman who met with an accident; the shoulder was believed to be dislocated, and four unsuccessful attempts had been made to reduce the dislocation.] The patient did not come to the Hôtel-Dieu till a month afterwards, when the following symptoms presented themselves. There was prominence of the acromion and flattening of the deltoid; the elbow was separated from the body, to which it could not be approximated, neither could the

arm be raised to the head; and, finally, there was a protuberance, evidently osseous, in the axilla. This concurrence of symptoms certainly indicated dislocation, but they are equally characteristic of fracture; and although it is true that crepitus and mobility of the fragments on each other, which are peculiar to the latter lesion, did not exist, it was possible to account for this by the interval that had elapsed since the accident occurred. On the other hand, fracture might have been produced by the blows which the patient said she had received, or luxation might easily have been the result of the fall; and the osseous protuberance in the axilla was not of the same uniform rotundity as the head of the humerus.

[Owing to the difficulty of diagnosis, Malgaigne made some suggestions, and the result of the joint investigation of these two eminent surgeons was as follows:]

In all fractures of the long bones, if there is no displacement, the limb remains of its natural length; but if, on the contrary, there is displacement, with riding of the fractured extremities, the limb is shortened. In the case of this woman, the dislocated arm, from the point of the acromion to the olecranon, or to either of the condyles of the humerus, measured half an inch more than the other, which circumstance alone convinced me of the existence of dislocation, and therefore constituted sufficient grounds for abandoning the idea that the case was one of fracture; but Dr. Malgaigne pointed out other indications deserving of attention; and first, a natural consequence of that already mentioned was the elevation of the anterior wall of the axilla; it was found that a line drawn from the inferior border of the clavicle to the lower edge of the great pectoral muscle, measured half an inch more on the affected side than on the opposite. Secondly, according to the same surgeon, the head of the dislocated bone must necessarily present a prominence anteriorly at the subclavian space, which is usually hollow, thus exhibiting a manifest difference between the two sides of the breast, especially in thin people: this was certainly very apparent in the case in question. Lastly, Dr. Malgaigne remarked that by making pressure with the fingers immediately beneath the acromion, the deltoid readily yields in dislocations, which was very apparent in the case of this woman; whereas, in fractures, on the contrary, it cannot be thus depressed. These several signs (which are constant in dislocations and not present in fractures, and each in itself a sufficient diagnostic index) were, in combination, regarded as positively determining the existence of dislocation.

#### ART. 48.—*The Diagnosis of Hernia of the Foramen Ovale.*

By Dr. ROESER, of Bartenstein.

(*Archiv. für Physiologische Heilkunde. Translated in several French and English Journals.*)

Cases of hernia of the foramen ovale are rare, and, unless when very large, are seldom discovered till after death. In the present case the patient was a female peasant, about thirty years of age, who had had one child two years ago, and another ten years before. For six years she had suffered at long intervals acute pains at the stomach, which arose suddenly without apparent cause, and spread over the whole abdomen, but chiefly around the umbilicus, and these, after continuing some hours, subsided most commonly after several attacks of vomiting. On the 16th of February, 1846, she had an attack of the usual pains at the stomach and around the umbilicus; but notwithstanding the occurrence of vomiting at the end of some hours, the pains did not subside. On the 17th blood was drawn, and two ounces of castor oil administered without any effect, and morphia was given. On the 18th she was seen by Dr. Roeser. There had been vomiting in the night, without mitigation of the pains over the abdomen, and there was now an acute burning sensation at the stomach; the urine had been hot and scanty, and for the previous twelve hours none had been passed. She could not lie on either side; when placed in the sitting posture she complained of an acute pain in the bowels, and of the bowels being projected forwards by twitches; her abdomen was somewhat swollen, presenting inequalities, arising from distended portions of the intestines; pulse rather frequent, not hard; resonance everywhere clear, tympanitic even in the hypogastric region, though the urine had not been passed for twelve hours. No marks of hernia were found at the usual apertures. Dr. Roeser was led to examine the pectineal region, when he remarked a tenderness over the foramen,

and a tumour the size of a nut, of an elastic feel, and very painful when touched. The patient now remembered that she had felt pain in the same situation in former attacks. The tumour might have been mistaken for a gland, but that it was more tense, smooth, and less pasty, and escaped under the fingers, while pressure caused an inward pain, which extended towards the epigastrium. Percussion furnished no diagnostic sign, owing to the thickness of the integuments and the smallness of the tumour.

On the evidence just recited, it was obviously a hernia of the foramen ovale. After the taxis had been kept up for half an hour, with great pain to the patient, both in the lower part of the abdomen and also at the stomach, along with nausea and eructations, the hernia was reduced. There was immediate relief, and in half an hour the bowels were evacuated. On examining the region of the superior and inner angle of the left foramen ovale, there was found a deep depression, admitting the point of the finger, which depression was hardly perceptible on the right side. A truss, with an elongated neck and cushion, was applied, which fitted exactly. In this case the loop of the intestine had escaped between the two obturator muscles and the obturator ligament, and was lodged under the pectineus and short adductor. This hernia is most probably more frequent in females, owing to the greater size of the foramen; and the acute pains attendant on it must arise from the pressure on the obturator nerves.

This case is a new instance of the necessity of examining all the apertures by which the viscera can escape when one is called to treat colic pains, and the so-called neuroses of the abdomen.

[Obturator herniæ have been most frequently observed after death. Cloquet believes they are more common than is generally supposed. Arnaud and Garengeot affirmed that they had detected and reduced this variety in the living subject, but Mr. Lawrence appears to doubt whether from their anatomical position they can ever be recognized during life.—*Lawrence on Ruptures*, ed. 4, p. 555.]

## SECT. II. NATURE AND CAUSES OF SURGICAL DISEASES.

ART. 49.—*Abscess in the Neck, communicating by an Ulcerated Opening with the Arch of the Aorta.*—By GEORGE BUSK, Surgeon of the Hospital Ship "Dreadnought."

(Condensed from the *Medico-Chirurg. Trans.*, Oct. 29, 1846, p. 296.)

On the 1st of June, 1846, I was requested by Mr. Sturton, to see a woman, in whom considerable hemorrhage had occurred from an ulcerated opening in the neck. He had been called to the patient about 4 A.M. on the same day, and was informed that the bleeding had commenced suddenly about an hour previously, and without any apparent exciting cause; it proceeded from a small fistulous opening in the lower part of the neck anteriorly. The woman had lost a considerable quantity of blood before he saw her, and very slight pressure sufficed at that time to stay the flow. I recommended that a graduated compress should be retained upon the opening, and in the evening I found that no further hemorrhage had taken place.

On removing the bandage and compress, I observed exactly in the mesial line of the neck in front, and close above the upper edge of the sternum, a funnel-shaped hollow, about an inch and a half across, lined with the common integument down to the bottom, which presented a fistulous opening about one-eighth of an inch in diameter, and in this opening were visible some small florid granulations; the whole presented very much the aspect of an old callous fistula, in which it might be supposed a tracheal cannula had been long worn. There was, however, no communication with the windpipe. The parts surrounding the fistulous opening were thickened and consolidated.

At first, after removal of the compress, I was unable to obtain any discharge from the opening, even by pressing with considerable force in its neighborhood, and neither blood nor pus escaped, but, upon the woman being desired to cough several times, the funnel-shaped hollow became suddenly filled with arterial



blood, which welled up continuously from the bottom, and not in jets, but upon more close inspection it could be seen that it rose with indistinct intermissions. The bleeding though slow was sufficiently copious to be alarming, and was immediately and readily stayed as before, by slight pressure with a compress and bandage.

The patient was a woman about thirty-five years of age, moderately stout, and presented no marks of scrofulous disease in the neck; she was pale from the hemorrhage, and became faint when placed upright. For about fourteen years she had perceived a small hard "lump," in the situation of the existing fistulous ulceration, from which she had never suffered pain nor even inconvenience, until about six months previously. Soon after this, the swelling in the neck inflamed and suppurated. The abscess was allowed to open spontaneously, about five months before the present time; on bursting, it discharged a large quantity of *white* matter, and had continued to discharge such ever since, sometimes in considerable quantity. This constant discharge constituted all the annoyance she experienced from the affection, her breathing never having been impeded, nor had she ever any cough.

The hemorrhage did not recur till the following morning, when blood was observed to ooze through the bandages: a neighboring surgeon, Mr. Bradley, being called in, removed the compress, upon which the blood was ejected in a jet which rose above his head; he immediately stopped the orifice, and the external flow of blood, which appeared then to fill the cavity of the abscess, and to cause considerable swelling of the lower part of the neck, and supra-clavicular regions, attended with a diffuse pulsation like that of an aneurismal tumour. This was the first occasion of any pulsation being perceived in the neighborhood of the fistulous opening. The sudden gush of blood exhausted the woman, and she continued to sink, till about 3 A.M. on the morning of the 3d of June, when she expired, about forty-eight hours from the commencement of the hemorrhage.

The body was examined the same day. On moving it upon the table, a large quantity of semi-fluid and extremely fetid grumous coagula escaped from the opening in the neck, and a still larger quantity was expressed from it. The ulcerated opening was found to communicate with a large irregular cavity filled with extremely fetid coagula; the cavity when cleared of the clots, presented the appearance of an old abscess. The internal surface was very uneven, ragged, and flocculent, and the walls, of unequal thickness, were formed by the consolidation of the tissues immediately adjacent, and in this thickened mass were imbedded some enlarged glands, which, however, presented no trace of scrofulous deposit. The hollow was of great capacity, and it contained at least a pound of coagulum; it occupied nearly the whole front of the neck below the thyroid cartilage, being bound *posteriorly* by the trachea, which was covered with a thick deposit, and in front the walls were formed by the integuments and fascia, and the atrophied expansions of the sterno-thyroid and hyoid, and partly of the sternomastoid muscles. The cavity extended on the right side downwards and backwards between the right bronchus and the arteria innominata, behind the root of the right lung (the apex of which was solidified by the compression), to the front and right side of the bodies of two or three of the upper dorsal vertebræ, the ligamentous tissue covering which formed, as it were, a portion of the walls of the abscess; and the bone, though not exposed, presented several small exostoses, indicating the considerable length of time the abscess must have extended to that point. Inferiorly, the main anterior cavity of the abscess reached the right side of the arch of the aorta, or rather of the ascending aorta, and for about two inches below the origin of the arteria innominata the external cellular tissue of that vessel, as well as of the greater part of the external side of the arteria innominata, was completely removed. The exposed middle coat was quite bare, and its fibrous structure clearly displayed. In the middle of the denuded portion of the aorta was a small opening or fissure about one-eighth of an inch in length, and the direction of which was oblique, as regards the direction of the vessel. Internally, the lining membrane exhibited at the corresponding point a narrow rent of the same size, the edges of which were sharp, abrupt and ragged, as if recently torn; and on the immediately adjacent internal surface there was a very thin deposit of fibrine. Immediately within the orifice of the arteria innominata the

internal surface of that vessel also presented in a slight degree a similar deposit, and upon holding the part up to the light, the wall of the arteria innominata, where contiguous to the abscess, appeared very thin and transparent, but there was no breach of its continuity. The heart and vessels, except as above, were healthy. The right bronchus presented internally, at a point corresponding to the part where it was crossed by the abscess, a blackened spot and slight roughness of the mucous membrane, similar to that in the arteria innominata.

The abscess appears to have originated in the lymphatic glands of the lower part of the neck, and being once formed, its peculiar situation under the immovable sternum and clavicles, would perhaps be a sufficient reason for its not closing. The case is chiefly interesting, as affording an unequivocal instance of a communication being formed between the cavity of an abscess and a large arterial trunk, in consequence of an ulcerative process being set up from without, and going on to produce such a thinning of the arterial tunics, that they finally gave way under the impetus of the blood. Had this communication been set up at an earlier period, and before the bursting of the abscess, it would have been very difficult, if not impossible, at that stage, to have avoided mistaking it for an aneurism: for when, towards the end, the orifice was closed, and the cavity of the abscess filled with blood, such a pulsation was caused, as very strongly to simulate that presented by an aneurismal tumour.

Another point of interest appears to be, the length of time the patient survived after hemorrhage had commenced from the ascending aorta, and the comparative ease with which it was stayed by pressure.

[The abscess should have been termed *fistulous*. . . . The extension of ulceration from a fistulous abscess to a large arterial trunk, as in this case, is not so rare an event. The communication, however, of chronic abscess with a large artery by ulceration, so as to simulate aneurism, is extremely rare. We know of no unequivocal case on record.—*Medico-Chirurgical Review*, April, 1847, p. 339.]

#### ART. 50.—*Fractures of the Superior Cervical Vertebra.*

Cases by Dr. COPLAND, and Dr. SPANGENHEIM.

(*Allgemeines Repertorium*, 1845, and *Archives Générales*, Dec. 1846.)

CASE I. A man, 60 years of age, and of strong constitution, endeavouring to turn in bed with his head firmly placed upon the pillow, felt something crack in the neck; very soon afterwards, rotation or flexion of the head became impossible without the most violent pain in this part. The author concluded there was a rupture or laceration of several muscles or ligaments, and, therefore, recommended rest and palliative remedies. The motions of the head, however, still continued painful, but, notwithstanding this, he resumed his occupation of coachman, and it was not until sixteen months after the accident, that he complained of weakness and swelling of the left arm. One or two days afterwards, paralysis occurred in both superior extremities, but it was incomplete on the right side; it became general, and death soon followed from asphyxia. On post-mortem examination, the second cervical vertebra was found completely fractured across the two sides; one of the lines of fracture passed near the basis of the odontoid apophysis; a chronic inflammation extended from the fracture to the envelopes of the spinal marrow: the arachnoid was covered with plastic lymph; the dura mater very much thickened, and the spinal marrow compressed at this point.

CASE II. An officer, 28 years of age, fell from his horse the 28th July, 1839, upon soft earth. The shock was received on one side of the head. He immediately remounted, and rode half a mile before reaching the village; but on arriving there, he felt all at once a crack in the neck, and fell down senseless. He revived a few minutes afterwards, but was obliged to hold his head with his hands. Removed to the military hospital, there was discovered, upon the left parietal bone, a little behind the coronal suture, a swelling about the size of a five-franc piece; and at the posterior and superior part of the neck, another tumefaction, in the middle of which, a hard tumour, apparently moveable, corresponding by its seat to the situation occupied by the axis, and creating the sensation of a prominence, was felt. The lightest pressure, or the least motion for changing the position of the

head, brought on most violent pain; and the slightest movement also brought on a very distinct crepitation. The head was bent forwards, the chin leaning upon the chest. Nothing led to the supposition that the spinal marrow was affected. By a very energetic antiphlogistic treatment, the patient first appeared to recover, and some months afterwards he walked with his head supported by Shaw's apparatus. All at once, during the summer of 1840, violent pain arose in the head and towards the pharynx, with very decided symptoms of chronic inflammation in the cervical vertebræ. Notwithstanding the most energetic treatment, abscesses in several parts followed; and the patient succumbed, exhausted by the suppuration, fifteen months after the accident. *Post-mortem*.—There was an abscess, filled with pus, under the superficial muscles of the posterior part of the neck. The deeper-seated muscles were partially destroyed or degenerated by the suppuration; the transverse apophyses of the third and fourth cervical vertebræ were carious, as well as the bodies of the vertebræ in this region; the interarticular ligaments and cartilages, particularly those of the atlas and axis, were swollen, and a large abscess, which contained four ounces of fetid pus, occupied the anterior part of the vertebral column, from the occipital to the seventh cervical vertebræ, and was connected with another abscess which opened under the clavicle; the posterior arch of the atlas was fractured near its articular apophysis; it was also carious, and destroyed to a great extent; the body of the transverse apophysis of the axis was equally destroyed by caries; the odontoid apophysis was fractured, its ligaments partly destroyed; however, the spinal marrow had not suffered, and appeared without alteration; the brain was healthy.

[These cases are peculiarly interesting from the time which elapsed between the periods of injury and death.]

ART. 51.—*Fracture of the Surgical Neck of the Humerus.—Displacement of the Lower Fragment.* By M. DEBROU.—As fracture of the surgical neck of the humerus is commonly occasioned by direct violence acting on the posterior part of the shoulder, or on the upper and outer part of the arm, M. Debrou thinks that the fracture is usually directed obliquely from above downwards, and from within outwards, or from before backwards. In 1843 he saw three cases of this fracture at the Hôtel Dieu of Orleans, in which the obliquity was in this direction, and in those three cases there was considerable prominence of the lower fragment, which was drawn upwards and carried inwards and forwards. When the extremity of the lower fragment is drawn in this direction, it encounters a smaller thickness of soft parts than if it were displaced externally, and may come in immediate contact with or even run the risk of perforating the skin. In the three cases above referred to, the extremity of the bone partially (but not completely) perforated the skin, and thence carried the integument backwards with it on the slightest motion of the elbow and of the inferior fragment. From this there resulted a depression of the skin, which became deeper the farther the lower fragment was carried backwards. In one of these cases the lower fragment was so firmly engaged in the skin that perfect reduction could not be effected until the bone was freed from the skin, by means of a subcutaneous section, with a tenotome introduced two inches from the site of the fracture.

*Dublin Med. Press, from Journ. de Chirurgie.*

ART. 52.—*Fracture of the Upper Extremity of the Humerus traversing the Bicipital Groove, and detaching the greater Tubercle.* By ROBERT SMITH, Esq., Dublin.

*(The Dublin Quart. Journal, Nov. 1846, p. 434.)*

I was called upon to examine the body of Julia Darby, æt. 80, who had died of chronic pulmonary disease. Upon entering the room the appearances of the left shoulder-joint attracted my attention, and struck me as being different from those which attend the more common injuries of the joint. The shoulder had lost to a certain extent its natural rounded form; the acromion process, though unnaturally prominent, did not project as much as in any of the luxations of the head of the humerus. The breadth of the joint was doubled. Upon pressing beneath the



acromion, I could plainly distinguish a portion of the head of the bone occupying the inner point of the glenoid cavity; it formed a tumor perceptible through the soft parts, while the remainder, and by far the larger portion of the head of the bone, lay beneath the level, and internal to the coracoid process; and between these two portions the finger sunk into a deep depression or sulcus, placed immediately below the coracoid process. The elbow could be brought into contact with the side, and there was no appreciable change in the length of the arm. Such were the external characters of the injury, and from these alone I was unable to pronounce positively as to its exact nature, but conjectured that it was some variety of luxation forwards. Upon removing the soft parts, the head of the bone presented itself, increased to nearly double its natural breadth: it lay beneath and internal to the coracoid process. The greater tubercle was completely broken off from the shaft of the humerus, and in situation corresponded to the inner part of the glenoid cavity; the fracture traversed the bicipital groove, which, in consequence of the displacement which the head of the bone had suffered, was situated exactly below the coracoid process; the glenoid cavity was changed both in form and size: it was smaller than natural, nearly flat, and broader above than below. A new shallow socket was formed for the head of the bone, upon the axillary margin of the scapula, and bony matter was deposited in the capsule, which was greatly enlarged; the cartilage had been nearly altogether removed from the head of the bone, which was covered by an ivory deposit.

What occurs in the cases under consideration is, in my opinion, simply this: a fracture, traversing the upper part of the bicipital groove, detaches the greater tubercle of the humerus, thus annulling the action upon the humerus of the supraspinatus, infra-spinatus, and teres minor; the folds of the axilla, the subscapularis, and the anterior portion of the deltoid, then, act almost unopposed, and draw the head of the bone forcibly inwards, against the inner part of the capsular ligament, and if, at the same time, the inner border of the glenoid cavity be broken (which I suspect is by no means a rare occurrence), the head of the bone passes still further inwards, and beneath the coracoid process, amounting, at length, to an actual displacement, which is permitted by the increased size of the joint, just as a displacement of the head of the femur will often be the consequence of a fracture of the acetabulum.

ART. 53.—*Partial Dislocations of the Humerus and of the Femur.*  
By the late BARON DUPUYTREN.

(*On the Injuries and Diseases of Bones.* Translated by F. Le Gros Clarke, 1847, p. 66.)

In 1824 the surgeon-in-chief of one of the Paris hospitals presented to the Academy a pathological specimen, taken from a man who died eight months after suffering from a dislocation of the humerus, which had not been reduced. It exhibited a false joint, formed on the one hand by the glenoid cavity of the scapula, and a small portion of the surface of the ribs, and on the other by the head of the humerus, which was grooved to receive the anterior border of the glenoid cavity, the two surfaces being thus locked together, so as to constitute a sort of hinge-joint. During life the only motions which could be performed were in a direction from before backwards, and that to a limited extent. In a case of spontaneous luxation of the femur, the same surgeon found the softened head of the bone resting on the anterior border of the cotyloid cavity, and there firmly locked, as in the preceding case. These, then, are two well authenticated instances of *partial dislocation* of the two orbicular articulations, the improbable occurrence of which led all authors to deny the possibility of their existence.

ART. 54.—*Spontaneous Dislocation of the Hip-joint.—Reduction.*

(*Month. Journ. of Med. Science*, Jan. 1847, p. 536.)

A young girl, aged 10 or 12 years, was admitted into the Hôpital de la Charité, and placed under the treatment of M. Gerdy, on account of morbus coxarius of the left hip, which had produced complete luxation of the head of the femur upwards and outwards. There was a good deal of swelling of the parts; but the

cotyloid cavity was felt empty. The general health had not suffered severely. By rest and antiphlogistic treatment the state of the patient was much improved, and pain on motion or pressure became much diminished. The head of the bone could be felt distinctly rolling on the *dorsum ilii*. M. Gerdy determined to attempt the reduction of the dislocation, and adopted the following proceeding with success. By means of a loop attached by a bandage to the leg below the knee, a weight was suspended, which, hanging over the foot of the bed, produced continued traction on the limb—counter-extension being made by a perineal band fastened to the head of the bed. The weight was at first light, and afterwards gradually increased, according to the power which the patient had of bearing it. A chair was placed at the foot of the bed, on which the weight was occasionally placed, to relieve the patient. In a few days, it is stated, the head of the bone had descended to the level of the acetabulum, and with very slight assistance, from rotation of the thigh, it regained its normal position. The reduction being now completed, the limb was fixed in this position. The reporter of the case does not mention whether the sufferings of the patient during this process were great; but it is stated, that after the reduction had been effected, very little pain remained, and that there was every prospect of a perfect recovery.

ART. 55.—*A New Variety of Dislocation of the Humerus.*  
By Professor ROSER, of Tübingen.

(*Arch. für Physiol. Heilk. Von Roser. Translated into the Amer. and French Journals.*)

The professor discovered, in a subject intended for dissection at the University of Tübingen, a variety of dislocation of the humerus not hitherto described by any author. The head of the humerus lay in front of the short head of the biceps; the sub-scapular muscle was ruptured, and completely detached from the lesser tuberosity of the humerus, and the head of the bone elevated the scapular extremity of the pectoralis minor. In ordinary dislocations of the shoulder, the upper extremity of the humerus lies immediately on the outer border of the scapula; in this dislocation it is separated from it by the biceps and the coraco-brachialis, whose tendons pass behind instead of in front of the humerus. On a careful examination the following dispositions were observed:

The dislocated limb was abducted and slightly everted, the head of the humerus touching the inferior border of the coracoid process. Intimate adhesions existed between the muscles of the shoulder and the ligamentous apparatus of the joint. The brachial plexus was surrounded by a very dense cellular tissue. The sub-scapular muscle, detached from the lesser tuberosity of the humerus, terminated in a bulbous mass, which rested on the neck of the scapula, and involved the musculo-cutaneous nerve. The head of the humerus lay in a capsule of new formation, below and internal to the coracoid process, was tolerably moveable, and the pectoralis minor was expanded over it, adhering very firmly to its capsule. The tendons of the coraco-brachialis and short head of the biceps descended behind the head of the humerus involved in the capsule. The long head of the biceps was entirely displaced from its groove, described a curve round the head of the humerus, and was completely adherent to and confounded at its insertion with the fibrous tissue which filled the glenoid process.

The subject of this observation had fallen seven years previously, while carrying a heavy load up a hill. The first attempts at reduction were made by some wood-cutters who came to his assistance. Several surgeons to whom he applied on the following day, were equally unsuccessful. Very forcible tractions, and several methods, including that of De la Motte, were tried; but every time that the head of the bone was thought to be reduced, it was found to be still displaced. The patient regained tolerable use of the limb, being able to dig and thrash, but could not put his coat on the left arm. He often experienced pain, and a sense of numbness in the fingers. Professor Roser easily produced this species of dislocation on the dead body, by cutting the tendon of the sub-scapular muscle, displacing the long tendon of the biceps from its groove, and then forcing the head of the humerus downwards. But what (he asks) was the obstacle to reduction? It was not, he thinks, muscular action, but the interposition of the short head of

the biceps between the head of the humerus and the glenoid cavity. To reduce this dislocation, the same principle should be adopted that is followed in other reductions, viz., to cause the head of the bone in re-entering to follow the course it took in its exit, and as, while being displaced, it probably sustained violent torsion outwards, during reduction, it should be forcibly rotated inwards, so as to slide over or else displace the interposed soft parts.

ART. 56.—*A Foreign Body in the Sublingual Region.*

(*Monthly Journ. of Med. Science*, Jan. 1847.)

A servant, 36 years of age, was occasionally subject, from his infancy, to a swelling under the angle of the lower jaw, which, while it lasted, was painful on pressure, and produced much uneasiness during mastication on that side of the throat. The swelling was thought to be of the lymphatic glands, and generally diminished under the use of emollient applications. Along with these symptoms the patient generally had uneasy sensations in the temple and the whole of the cheek of the right side. On examination, M. Stanski, under whose care the patient was, could find nothing externally to account for these symptoms; but on inspecting the interior of the mouth, he found the place of the sublingual gland occupied by a hard tumour. Inflammatory action took place in the part a few days afterwards, and M. Stanski, thinking that the tumour was caused by the existence of a salivary calculus, made an incision into it, and with a pair of forceps removed a small hard, whitish, irregularly-rounded body. Next day, on examining the wound with a probe, a second foreign body was detected, and easily removed. On examining these attentively, they were found to be two small molar teeth; and yet the patient was found to possess all his teeth entire.

M. Stanski explains the presence of these teeth by their being supplementary teeth of a second or third dentition, which are occasionally found to occur, but usually in an abortive condition, as they were in this case.

ART. 57.—*Rupture of the Posterior Tibial Artery fatal from Phlebitis after Amputation.*  
By MR. MICKLETHWAIT.

(*Condensed from the Prov. Med. and Surg. Journal*, Jan. 13th, 1847.)

A married woman, aged 51, was admitted into hospital in September, 1844. The whole of the back of the right leg, from the popliteal space to the ankle, was uniformly swollen, red, painful, and tender; no pulsation or bruit could be detected over the swelling, which had existed nearly two months previous to her admission. At the end of a month the lower part of the leg was reduced to nearly its natural size; but in the situation of the belly of the gastrocnemius it continued as large as ever. During the next fortnight the leg increased in girth, and became generally softer; there was a well-marked sense of fluctuation between the heads of the gastrocnemius, the pain had become much more severe, and there was an oedematous state of the dorsum of the foot. At the end of another month the countenance had become sallow and extremely haggard: the pain was even more severe, and there was a secretion of a yellowish-green transparent fluid from the skin, which at this part was thickened and appeared irregularly roughened. In one place a small excrescence, soft, smooth, and shining, had appeared, and the outer and back part of the calf of the leg had also become of a purplish hue, with enlarged cutaneous veins, the swelling thus assuming an aspect of malignancy. The sense of fluctuation remained distinct. After a fortnight's interval of comparative ease, a violent attack of pain recurred without apparent cause, and continued for some days, in spite of frequent and large doses of morphia. As she was anxious for something more to be done, an incision was made into the tumour, when its contents proved to be coagulated blood. On passing the finger through the clot, florid arterial blood gushed out profusely; the tourniquet was tightened, and immediate amputation determined upon.

On dissecting the leg, the gastrocnemius was found expanded tightly over a cyst. On removing the soleus, a cyst was exposed, formed apparently by the deep fascia of the leg. The cyst seemed girt from above downwards, along the inner third



by a tight cord, which proved to be the posterior tibial artery, vein, and nerve. The cavities of the two former were not obliterated, but impervious from pressure; the vessels curved outward and forward to join the popliteal above, and resumed their natural position below the cyst. On opening the vessels, their inner surface seemed healthy. There was a small longitudinal rent in the anterior wall of the posterior tibial artery, about three-quarters of an inch from its origin, communicating with the cyst. The interosseous ligament was forced forwards, so as to be convex anteriorly instead of flat, and the posterior surface of the tibia was denuded of its periosteum, and rough.

On the tenth day after the operation she had a severe rigor, unattended by pain in any part, or by cough, but there was increased rapidity of the pulse, which was exceedingly small. There were more restlessness and uneasiness from position, the features became extremely pinched, emaciation increased, and there was complete loss of appetite. Notwithstanding the free administration of stimulants, the rigors continued, and the weakness increased. Slight cough came on, unattended by pain even on deep inspiration; respiration became hurried and obstructed, the pulse extremely feeble, and she gradually sank.

The body was examined sixteen hours after death; it was much emaciated. There was nothing abnormal in the appearance of the stump; the divided structures were already contracted and agglutinated by organized lymph. The artery seemed healthy and pervious to within an inch of the ligature; this part was filled by a clot not yet conical, for the end of the artery was not completely contracted. The vein was blocked up from the divided end to the point where the internal iliac joins the external iliac vein; the divided end was perfectly contracted. On opening the vein, and passing upwards for about two inches and a half, the diminished vessel was completely filled by coagulum, and in one part of this, entirely within it, was a small collection of matter, about the size of a hemp-seed; the next three inches were filled by a dirty brownish-red mixture of blood and pus. Higher up the vein was filled by adherent coagulum, and in the substance of this, an inch and a half below Poupart's ligament, was another abscess as large as a cherry-stone; the contents of this, as well as the other, were thick, whitish, unequivocal pus. The internal iliac vein was filled with free pus. The common iliac and vena cava were pervious and apparently healthy. The glands in the groin were enlarged, but healthy in structure. There were small deposits of pus under the mucous membrane of the os uteri and adjacent parts of the vagina. The uterus was oblique, and one lateral ligament considerably shortened; the ovarian and Fallopian tube of that side being firmly adherent by lymph. Several patches of acute inflammation, with deposits of light reddish-brown lymph, were found in the spleen, and in the centre of one patch there was semi-purulent fluid. The liver was healthy, except in one part of its upper surface, which presented an ecchymosed appearance, but which really consisted of a number of small veins distended with blood. There were two deposits about the size of nuts, of a yellowish-white friable matter, in the upper lobe of the right lung—not at the apex—much resembling recently deposited lymph and pus. The lower lobe of left lung gave evidence of previous pneumonia. There were no tubercles, nor was any disease found in the other organs.

[Mr. Micklethwait mentioned two other fatal cases of phlebitis following amputation, and remarked that no allusion to this somewhat unusual termination is to be found either in the works of Sir A. Cooper or of Mr. Ferguson.]

**ART. 58.—Muscular Hernia.** A man received a violent contusion by the fall of a piece of timber upon his leg. Pain, swelling, and inability to walk succeeded. On entering the Hôpital de la Pitié there was a soft, unfluctuating, nearly colourless tumor about the middle of the anterior surface of the limb. Lisfranc diagnosed a muscular hernia of the tibialis anticus through the aponeurosis, which had been ruptured by the blow.

These muscular herniæ, produced by violent contusions, have a close relation to the affection known by the term "*luxation of muscles*," generally occasioned, according to Pouteau, by the unequal contraction of the muscles of a limb, one muscle acting alone or being contracted more powerfully than any of those which should concur in the movement:—

"If one of the flexors of the foot contract alone or with more force than the other flexors, it will be thrown by the irregularity of this contraction out of the place which it occupies amongst the neighbouring muscles, and it cannot return without some artificial assistance, since the neighbouring muscles immediately fill up the vacant space. Again, it may happen that a relaxed muscle placed between two muscles contracting vigorously may be forced forwards. . . . Long thin muscles only are subject to this displacement; those which are large, short, thick, and fleshy, are not exposed to it."

Pouteau admits the possibility of a contusion being a cause of this accident, and gives a striking example from Portal, wherein the nature of the injury was demonstrated after death. He insisted much on the importance of the differential diagnosis of these muscular displacements and simple contusions: but in a practical point of view this diagnosis is not of so great importance, the treatment is the same in both cases; methodical frictions, and slight compression with an appropriate bandage, suffice for the most part to reduce the displaced muscle. Lisfranc confined himself to this treatment, and the patient had improved greatly in a very short time. In the case of ecchymosis with subcutaneous or subaponeurotic sanguineous effusion, slight compression and resolvents also constitute the treatment.

*Gazette des Hôpitaux*, Nov. 7, 1846.

ART. 59.—*Excerpta from Dr. PORTER'S Clinical Lectures on Syphilis.*

(*The Dublin Med. Press.*)

I hold that as there is but one venereal poison, so is there but one venereal sore, and therefore that the discrepancies observed, and the existence of which cannot be denied, ought to be explained exactly in the same manner that we endeavor to account for the various appearances that other ulcers assume: thus, if eight or ten men receive wounds or injuries of a similar nature, we do not expect that all shall subsequently suffer from precisely the same kinds of sores, and we endeavor to explain the differences by the effect of structure, or of situation on the progress of the wound, or of the manner in which each might have been treated, or of the peculiar constitution of any of the so-injured individuals. In like manner the introduction of the venereal virus into a part may be regarded as an injury which, under precisely similar circumstances, ought to, and probably would, be attended by precisely similar results in any number of cases whatever; but such uniformity is not to be attained, and therefore we should yield to the modifying causes of inflammation the same influence in these cases that we attach to them in every other. Thus it will be conceded that ulcers assume varieties of character, according to the structure in which they happen to be situated, and there is no reason why chancres should be exempted from the general rule: and also that they are modified by situation, distance from the centre of the circulation, and accidental position in parts whence the blood may freely return or the reverse. It is also admitted that a patient's constitution, or general state of health, exercises a paramount influence on any local disease with which he is afflicted, and this not only to the extent of inducing inflammation, phagedena, or gangrene, but that after the derangement occasioned by a single debauch in wine, or other irregularity, will be plainly observable in the altered condition of a sore. Lastly, the effect of treatment in changing the characters and appearances of ulcers is too obvious to require remark, and if these influences are in all ordinary cases entitled to the consideration they receive from practical surgeons, there can be no reason why they should not claim at least an equal degree of attention in syphilis. I arrange chancres then, first as they appear in persons whose constitutions do not interfere with their ordinary progress, and where the differences observable amongst them may be attributed to structure, situation, duration, and the kind of treatment to which they have been subjected; and secondly, as they evidently seem to be modified by some depraved state of the system, inducing inflammation, phagedena, or gangrene.—*Jan. 13, 1847, p. 18.*

The true syphilitic chancres occasionally form within the orifice of the urethra, producing local symptoms, in many respects resembling gonorrhœa, and of course followed by their own legitimate constitutional results afterwards; and that these cases may be, and often have been, mistaken for gonorrhœa, and furnished what was sup-



posed to be demonstrative evidence of its capability to infect the entire system, is not only possible, but I have before me, at the instant in which I write, a case in which such chancre is present, has existed and been overlooked for the last nine or ten weeks, and was within the last three days adduced as a triumphant proof of the identity of the two diseases. But in mentioning the fact, let me not be misunderstood as attempting to settle this controverted point, which, on the contrary, I wish to leave wholly untouched, but to direct your attention more forcibly to the practical part of the subject, by showing in what different ways and how very extensively a careless examination of any case may prove injurious. Chancres, then, are occasionally found within the urethra, and can only be seen by separating its little lips, sometimes surrounding the entire canal, but more frequently occupying only one side or the inferior angle, rarely or never the superior in the first instance. On looking at an urethra thus affected, its margin seems sharpened and slightly inverted or puckered—appearances directly the reverse of those which attend the commencement of gonorrhœa. On separating the lips of the urethra, the surface of the chancre is seen slightly hollowed and covered with an adherent whitish lymph, or a very superficial slough, somewhat resembling an excoriation. The discharge is more copious than that from chancres in other situations, but in far less quantity than that attending gonorrhœa; it is of a whitish semi-purulent appearance, and in persons who habitually have the glans denuded, often coagulates, and so seals up the orifice of the urethra, that when about to pass water, the patient is obliged to make some effort to overcome the obstruction. In the absence of inflammation there is little or no surrounding hardness or tumefaction of the glans, nor in general does much irritation extend backwards into the urethra, the patient seldom complaining of scalding, ardor urinæ, or that very troublesome symptom, chordee. So far it seems not very difficult to distinguish any case of chancre from gonorrhœa; but we must recollect that in many instances it may be impossible to examine the urethra, or even to denude the glans; in others, particularly amongst the lower orders, from inattention to cleanliness, the discharge is allowed to accumulate, so that it is not easy to form a correct estimate of its actual quantity, and in some the characters above mentioned are not distinctly marked. I have seen a case of chancre attended with great pain on making water, and the resemblance may possibly in some instances be carried further.

Mr. Howard\* states that he has seen a case of chancre at the orifice of the urethra attended with irritation about the neck of the bladder and prostate gland, though it produced no one marked symptom of virulent gonorrhœa; and another instance of a chancre in the same situation, which was attended with hardness and commencing abscess in perineo. After continuing thus for four or five weeks, these chancres gradually merge into their second stage, when it may be observed that the lips of the urethra are a little everted or pursed out in one or both sides, which appearance is caused by the surface of the chancre, from being as at first hollowed or concave, becoming either tumefied or sometimes raised into a small tubercle. The discharge now assumes more of a gleet character, and if the case ever bore a resemblance to gonorrhœa, it now partakes of the nature of a gleet. In this stage, if the case has been mistaken, astringent injections will probably be used; the sores will thus be healed, and if in due time constitutional symptoms supervene, the whole will be recorded as a well-marked instance of virulent gonorrhœa, being capable of contaminating the system.—*Idem*, p. 20.

In July, 1840, a married gentleman, the father of several healthy children, whilst on business in London, unfortunately had intercourse with a servant girl at one of the hotels, and contracted a sore on the penis, which was pronounced not to be venereal, and healed by topical applications. He returned in August, and in the latter end of September consulted me for sore throat. It was of that description which I am accustomed to describe as resembling the mark of a snail-track on the part, and I unhesitatingly pronounced it to be syphilitic. He appeared greatly distressed, acknowledged his transgression, but still seemed to lean with some hope on the opinion of the gentleman who had first seen and treated the case, and refused to take mercury, which indeed I was unwilling to press, as I

\* Howard on the Venereal Disease, 2d edition, p. 33.



understood his wife was far gone in pregnancy. In January, 1841, he came to me in a great fright, requesting me to see his wife, whom he feared he had disordered. I found her with several spots of button scurvy, and gave my opinion to the husband that they had a syphilitic origin. Still he was unwilling to believe in a calamity which he dreaded beyond anything in the world, and had a surgeon of eminence in consultation, who decided at once that it was button scurvy, and not venereal, and appeared to be greatly strengthened in the opinion by the fact of the lady never having had a previous symptom of any description. In the course of a few days, however, the question was settled by the birth of a child, who died within a week of unmistakeable confirmed lues. Now, this infant had been begotten in April, three months before the father's first contraction of the ailment, and must therefore have been poisoned by the circulation of the mother at a considerable period subsequently. The question is, how did that circulation become contaminated, seeing that the father had never a sore capable of furnishing a drop of matter, and the mother never a symptom of any description until the doubtful one of button scurvy, which only appeared a few days before her confinement.

I might produce many, very many cases of this description, but none so convincing, none so trustworthy as this. The gentleman was sensible and strong-minded; he confessed all to his wife, and both parties were subjected to a course of mercury and recovered. The case is altogether in my mind above suspicion, and it would only detract from its effectiveness if I related others less authoritative. They have, however, led me to the conclusion, *that the semen of a diseased man deposited in the vagina of a healthy woman, BY BEING ABSORBED, may contaminate that woman without the necessary occurrence of a chancre or any open sore secreting matter on either the man or the woman.*—Feb. 17, 1847, p. 110.

It would appear that syphilis has an inherent tendency to wear itself out by passing through a number of patients, and even something like this may be observed in the same individual. I believe it has been remarked that the same woman has gone through several confinements, each time producing an offspring less tainted, until at length the disease appeared so mild that the infant was capable of being preserved by medicine; and if such can happen with the individual, it is presumptive evidence that it might be eventually worn out by passing through the many.—Feb. 24, p. 116.

Another point that has been noticed, but not very forcibly insisted on, may have some influence in causing syphilis to assume different forms and characters, namely, that it is, or seems to be, acted on by those unknown and often inexplicable circumstances that induce epidemic affections in general. In the dispensary at the Meath Hospital I have occasionally remarked to the pupils the prevalence of one particular form or symptom among the patients. Thus, at one time, almost every person so presenting himself shall have bubo, at another scarcely one; at one time almost all the chancres shall be phagedenic, or at least, unhealthy; at one time one particular form of eruption; and, at the very moment I am noting this lecture, I observe a great number of specimens of the pustular eruptions, a form of cutaneous syphilis by no means of frequent occurrence; at one time you will be enabled to observe and to study iritis in all its stages, by reason of the number of cases that present themselves; and, again, months may pass away without producing more than an accidental solitary instance. I know not how far this remark may accord with the experience of other practitioners, or, being observed, whether it ought to be deemed of any importance; it is only mentioned here as being (if true) one cause, however slight, of the different aspects and varieties assumed by the symptoms of syphilis. On the uniting of the syphilitic poison, Dr. Porter further remarks:

I am satisfied I have seen syphilis exhibited in the children of persons who had suffered from each and every form of cutaneous disease usually attributed to that poison—the scaly, the papular, the pustular, the tubercular—all seemed to be contaminated alike, and displayed the same loathsome appearances. Now, let any practitioner show that this position is untenable—let him produce the syphilitic or syphiloid eruption which he will not treat with mercury, and yet guarantee that his patient shall have healthy children; or, if the children are diseased, let him foretell what peculiarity of disease it will be, and foreshow its deviations from

the ordinary forms of syphilis, and at once I will acknowledge the truth of the doctrine (a plurality, of poisons), and adopt it in all its parts. But if the contrary is the fact—if the ultimate results of a poison are always the same, I must regard it as a presumptive proof that its origin is the same, although I may not be able to explain the different appearances it may assume.

One and the same woman, having only one sore, may infect different persons with sores of different characters. I am quite aware that an opposite opinion has been entertained by most respectable authorities.

Years ago, whilst yet a student, several of my companions in college contracted the disease, and all attributed the affection to the same courtesan, a woman of the name of Hautenville. They had sores of different characters, and one of them in particular, a gentleman who is since dead, had one of the worst phagedenic chancres I ever saw. This female became a patient of Mr. Hewson's, in the old Lock Hospital, where I had an opportunity of seeing and attending her. Through curiosity on the subject, I suggested that she should be carefully examined; and the result proved (as far as anything connected with syphilis is susceptible of proof) the truth of the above position. I think I have observed the same results on other occasions.—*Feb. 24, p. 117.*

ART. 60.—*A Case of Spontaneous Gangrene of the Lower Extremities, arising from the formation of Coagula in the lower part of the Abdominal Aorta, in the Arteries given off below the superior Mesenteric, and in the Arteries of the Affected Limbs.* By HENRY W. FULLER, M. B., L. M. Cantab., Medical Registrar at St. George's Hospital.

(Condensed from the *Dublin Med. Press*, March 3, 1847.)

The patient, a thin but tolerably healthy woman, aged 37, was suddenly seized on the 8th of June, with most acute pain in the right foot, which shortly afterwards extended up the leg. She was immediately subjected to medical treatment, but without relief; and when admitted into the hospital three days afterwards, her right leg was so exquisitely tender that the slightest touch caused intolerable pain. Her extremities, however, were neither discoloured nor œdematous. With the exception of albuminous urine, there was no evidence of constitutional disturbance, or of any real mischief at the seat of pain. Various means were adopted to relieve the pain and obtain rest, but without effect, her sufferings being most acute. On the 18th instant, ten days after the commencement of her illness, the superficial veins on the right foot and ankle became rather more distinctly marked than usual, and the foot perhaps rather cooler than the corresponding extremity; and on the 22d the coldness became so manifest, and the foot at the same time so decidedly mottled in appearance, that there could no longer be any doubt on the matter. The gangrene which had thus commenced continued to spread till it had involved the whole of the right extremity. On the 30th, the left foot began to mortify, and ultimately the left leg and part of the corresponding thigh. The affected limbs presented excellent examples of gangrena sicca. For the first five or six days the parts affected became gradually darker, until they assumed a perfectly black appearance; this blackness was then replaced by a brilliant scarlet color, which in its turn yielded, shortly before death, to an inky black hue. The parts throughout remained icy cold. The treatment consisted of the exhibition of iodide of potassium, opium, and stimulants, internally, while the limbs were wrapped up in carded wool. But everything failed to afford relief, and she sank on the 15th of July.

The following is the result of the post-mortem examination. Every organ in the body was perfectly healthy, with the exception of the kidneys, which presented a well-marked specimen of granular degeneration. The heart and large vessels were most minutely examined, and neither in the vessels of the affected limbs was there the slightest trace of inflammatory action, or of osseous or atheromatous deposit. Indeed the blood-vessels, both arteries and veins, presented a remarkably healthy appearance; but the lower part of the abdominal aorta, the arteries given off below the superior mesenteric, and the arteries of the affected limbs, together with their corresponding veins, were completely blocked up by firm fibrinous



coagula, which were in great measure discolored, and slightly adherent to the internal coat of these vessels. Some of these coagula, on being cut into, were found soft and cream-like in their centre. In the right auricle and left ventricle of the heart, in addition to the ordinary coagula commonly met with after death, were two coagula, precisely similar to those above described.

The author observes that from first to last this case presented the ordinary features of senile gangrene; yet none of the usually alleged causes of that disease were present. The heart and blood-vessels were perfectly healthy; she had lived regularly, was in the prime of life, in comfortable circumstances, and in tolerably good health; and as during life there had been no symptom of arteritis, so after death was there no evidence of such inflammatory action.

He proceeded to explain his own views as to the cause of obliteration of the blood-vessels. Admitting that it might sometimes result from arteritis, and sometimes from excessive osseous deposit and consequent interruption to the arterial circulation, he stated it as his belief that coagulation is not unfrequently due to a peculiar condition of the blood itself. He illustrated this point by reference to facts which have lately been brought under the notice of the profession, and expressed his conviction that the partial ossification of the vessels occasionally met with accompanying mortification should, in most cases, be regarded as a simple coincidence, and by no means as the cause of the formation of coagula.

ART. 61.—*Erectile Tumour of the Head of the Tibia; Ligature of the Femoral Artery; Death.* This instance of a disease which has only of late years attracted the attention it deserves (Abstract, Vol. II. p. 270), occurred at the Hôtel Dieu of Toulouse.

A female, aged 25, experienced for the first time, about March 1843, indistinct pains in the left leg. These pains were transient, and did not impede the motions of the joint. About the middle of the year she fell from a chair and struck her limb; after which the disease from which she eventually died declared itself more positively. A tumour was now perceptible in the region of the head of the tibia, which was leeches by the surgeon in attendance, as may be imagined, without relief, but, on the contrary, it rapidly increased in size until November, when it exhibited the following appearances. At the upper part of the left leg, immediately below the knee, an irregular tumour was perceived, consisting of two unequal elevations, hard and resisting, incompressible and not painful on pressure. Pulsations were also plainly perceptible isochronous with the arterial diastole; there was also a slight *bruit de soufflet*. Both the pulsations and bruit ceased on compression of the crural artery. The knee-joint and the popliteal space were in their natural condition; the general health was good. The diagnosis was erectile tumour of the head of the tibia.

The operation decided upon, namely, ligature of the crural artery, was performed in the January succeeding, the female being at the time five months pregnant. As soon as the ligature was applied, the pulsation in the tumour entirely ceased. The next day the tumor was considerably diminished in size, and the patient was to all appearance doing well in every respect; but it was speedily observed that suppurative inflammation of the cellular tissue had supervened; pleurisy with effusion followed, and the patient died at the end of the week, after having miscarried. *Post-mortem*:—Sero-purulent effusion in the left pleura, with compression of the lung; other organs healthy. The cellular tissue of the thigh on which the operation had been performed was filled with pus, which had burrowed among the muscles in every direction. On removing the integument from the tumour, the latter was found to be hard and incompressible in some parts, fragile in others, and crepitating on pressure like dry parchment. In some points the bony tissue had completely disappeared. A division of the head of the tibia showed that the tumour was composed of a tissue of varied color, being yellow in some spots, rose-colored in others, and spotted so as to resemble a section of the brain. The mass of the tumour appeared to consist of two substances, one of a chalky white and inorganic, the other having an areolar appearance, and appearing to contain the former. Here and there masses resembling fat appeared, as well as spots having the aspect of softened encephaloid matter.

These varieties of diseased structure had entirely replaced the spongy tissue of the bone, but the cartilage was unaffected. The more solid formations of the bone



were reduced to a complete shell. No vessel of any size was traced into the tumour.

*Gazette des Hôpit.*, Jan. 1847, and *Med. and Surg. Journal*, March 10, 1847, p. 106.

### SECT. III. THE TREATMENT OF SURGICAL DISEASES.

ART. 62.—*Removal of Bone for Neuralgia. A Neuralgic Affection of the Cranium cured by Trephining.* By Dr. E. H. DIXON, New York.

(Condensed from the *Boston Med. and Surg. Journal*, Aug. 1846, p. 53.)

In the first number of the "New York Journal of Medicine and Surgery," of July, 1838, there is a case detailing the facts connected with the removal of part of the tenth rib for a neuralgic affection of the intercostal nerve, consequent on a violent contusion of the bone. It was performed at the urgent solicitation of the patient, who had tried every imaginable means for relief, including tonics, cupping, blistering, &c. &c. She was declining rapidly from constant loss of sleep and innervation produced by the excessive use of morphine. The operation was completely successful, the pleura remaining uninjured; it produced instant relief, and the patient rapidly recovered her health and spirits, gaining twenty-three pounds of flesh within two months after the operation. She is now perfectly well, though it was performed eight years since. The diagnosis is important, and as its evident verification by the result, influenced me in the performance of the operation I am about to detail, I will briefly state it. The rib, as it proved upon examination of the piece removed, had not been fractured, though a small bony projection, of the size of about half a pigeon's egg, as it appeared under the skin, it was supposed indicated either a fracture, enlargement of the bone, or a periosteal growth. This was not important, however, to the diagnosis, which was "pressure upon the intercostal nerve by the enlargement," producing the violent pain constantly experienced in the epigastric region, that portion of the abdomen being supplied with nerves from the parallel intercostals, and the fact being well known that pain extends from an irritated nerve to its distribution.

June 18, 1846.—Mrs. Bishop, the widow of a deceased clergyman, a lady of 50 years, and of a highly intellectual character and remarkable self-possession, about seventeen years since received a blow from the falling of a window-sash upon the upper and posterior angle of the left parietal bone. There was neither a wound, nor suppuration consequent upon the injury, and it excited no further attention after the application of some simples to the bruised part, until a few weeks afterwards, when it became the seat of the most exquisite and constant pain. This observed no regularity in its accessions; it steadily increased until it became so intolerable, that she was obliged to resort to morphine, and eventually to sulphuric ether, both of which articles she eventually used in enormous quantities, though greatly opposed to all stimuli from previous education and habits of thought. Even when under their influence her mind was clear and unclouded; and she had occupied the long period of her affliction with the religious and polite literature of the day. Some idea may be formed of her state of mind, by the information that she was well acquainted with the manner of the operation and the diagnosis of her disease at the period of my visit. Mrs. B. had requested my opinion some two years since; at that time there were no symptoms of epilepsy, however slight; neither had there been at any time the least loss of consciousness or disposition to fall. I proposed at that time a circular incision to the bone; and if that did not benefit, a caustic issue over the part. The operation of trephining was proposed as a last resort. This was not done. About a year before my last visit, Dr. Gross, of Louisville, examined her case, and, under the desperate circumstances, acceded to her desire, to submit to the trephine. She requested me to perform it, and I visited her for that purpose on the 18th of June last. At this period there was occasionally slight loss of consciousness for a few moments, particularly when the circulation was hurried; still no symptoms of epilepsy. This

symptom influenced me to perform the operation. The amount of morphine and ether consumed within the previous six months was almost incredible.

The amount, as stated to me, was "from one to two drachms of morphine per week, and one hundred and twenty-six pounds of ether during the six months." This enormous quantity, so perfectly accustomed to it had the system become, did not even exhilarate the patient, or for one moment cause her to lose her equilibrium. Her deportment was characterized by the utmost quiet, and that perfect calmness and self-possession characteristic of the well-bred woman. Even during the operation, when she had taken an unusual quantity, her conduct was quiet and natural. There was nothing peculiar or difficult in the operation; it was performed in the presence of Dr. Cooper, Dr. Sloan, and Dr. Inness, all of Easton. The patient placed her finger on the spot, and after being engaged in conversation, was again requested to indicate it. She invariably recurred to the same spot. This precaution was necessary, for we had no other guide, not even the slightest elevation or eschar marked the seat of the injury. On removing the bone, the cause of the affection came to light; there was a considerable exostosis on the inner side, amounting to rather more than an eighth of an inch from the plane of the inner surface of the cranium. This, notwithstanding its comparative smallness, had been the growth of seventeen years. Immediately upon raising the bone, the patient's brow became elevated, and she declared "she felt free and had more room." All the unpleasant symptoms have vanished, and the patient is gradually discontinuing her morphine, which, although she has not the least vestige of pain, could not wisely be at once discontinued. She does not now take one quarter the former quantity.

I hope the following remarks, appended to the case first stated, will not be thought irrelevant; they may serve to explain the motive for the performance of an analogous operation, which, but for the result, might have been thought imprudent. I conceive them to apply equally to this case. "Should this operation be thought unwarrantable, I can only say, I know of no other means of relief, and that the patient importuned me for months to perform it, after having been told by many surgeons of eminence, as well as by myself in their presence, that it might prove fatal. She uniformly answered, that death was preferable to the life she endured. It is highly important that the extent and danger of operations that may conscientiously be performed for neuralgia, should be determined, as the strongest constitution will in time yield to its undermining influence."

ART. 63.—*Excision of the Elbow-joint in a case of Caries of the Articular Extremities of the Bones.* By GORDON BUCK, Jun, M. D., Surgeon to the New York Hospital.

(Condensed from *Philadelph. Med. Exam.*, Sept. 1846, p. 574.)

Barney Foley, of temperate habits and good constitution, was admitted, June 6th, 1844, into New York Hospital, with inflammation of the right elbow-joint, of nearly two years' duration, that originated without injury or other known cause, while engaged in his occupation as fireman.

The only previous ailment he remembered to have had, was stiffness with contraction of the right knee-joint, at the age of fourteen, which was relieved by blisters. The present affection commenced with a swelling between the olecranon and the outer condyle, attended with stiffness and slight pain. On being punctured, a glairy fluid, with lumps of solid substance, was discharged. With occasional interruptions, he has been able to use the limb, though the joint has continued stiff, and its motions have been impaired. Medical treatment has been employed for a year past, such as blisters and cupping; till recently, has suffered but little pain, and his general health has continued good.

On the 1st of July, the condition of the limb was as follows. A uniform swelling involves the elbow, tapering off to the middle of the fore-arm below, and of the arm above, where the limb becomes small and wasted. The prominences of the olecranon and condyles, as well as the anterior fold of the joint, are obliterated. The swelling is formed by thickening and induration of the soft parts, the integument covering which, particularly over the posterior part, has lost much of its suppleness and mobility. Pressure over the olecranon and condyles causes pain.

Synovial fluid is discharged from two openings, one of which is situated at the outer edge of the ulna, three fingers' breadth below the olecranon, the other, an inch above the inner condyle; the former leads to rough bone at the head of the radius; the latter, though it extends more than an inch inwards, does not communicate with exposed bone.

The habitual position of the limb is that of incomplete extension. A slight degree of flexion from this position is admissible, as well as partial pronation and supination, all of which are attended with pain. No sensation of roughness is perceptible in performing these motions. The surface of the swelling is pale; the temperature above that of the rest of the limb. Two issues have been established near the outer condyle since his admission, and an attempt made to preserve the limb flexed at a right angle, it being the most favourable position in which to allow ankylosis to take place. This, however, had to be abandoned, in consequence of the increased pain and inflammation that followed. General health good; pulse sixty-two; tongue somewhat furred; bowels good.

July 25th. Preparatory to the operation to be performed this day, the issues have been allowed to heal up. The swelling about the joint has rather diminished. The upper opening extends two inches downwards and outwards, and now communicates with denuded bone. At a distance of two fingers' breadth above the condyles, the os brachii appears to be uneven and enlarged. The patient's general condition continues favourable, appetite good, and bowels regular.

*Operation.*—The tourniquet having been applied at the insertion of the deltoid muscle, and the patient placed in the recumbent posture, on his left side, with the head and shoulders elevated, and his back towards the operator, a longitudinal incision, six inches in length, was made over the olecranon, extending to a distance above and below it, and penetrating to the bone. The triceps muscle and tendon thus split, were raised toward the outer condyle, care being taken to keep close to the bone, and avoid dividing the connexions of the tendon with the aponeurosis of the fore-arm. The same course was pursued in the dissection toward the inner condyle, the ulnar nerve being drawn inwards to prevent its being wounded. The integuments and subjacent aponeurosis, were next raised on either side, below the olecranon, the olecranon itself denuded, and more than an inch of this process removed with the amputating saw. The edges of the wound being drawn forcibly to either side, the articular extremity of the os brachii was detached from its connexions, by dividing the lateral ligaments and the muscles arising from the condyles, which allowed it to be projected from the surrounding soft parts, while a transverse section was made above the condyles, separating a portion an inch and a half in length. The head of the radius was now ascertained to be rough and denuded, as well as the smaller sigmoid cavity in which it rotates upon the side of the ulna. The division of the annular ligament, allowed the head to be cleared from the soft parts sufficient to excise it at its neck. An additional portion of the ulna, including the coronoid process and lesser sigmoid cavity, remained still to be excised, which was effected by carefully dissecting up the insertions of the brachialis anticus muscle, as far as was necessary, and then making a section from before backwards, with a metacarpal saw applied just below the coronoid process. The rough angular edges of the bone were then pared away. Several ligatures were applied to small vessels, and the edges of the wound brought together with seven sutures, between which adhesive straps were applied, passing half round the limb. The diseased part presented the following appearances: a grayish, jelly-like substance covered the synovial surfaces, being most abundant where the synovial membrane passes from the bone and lines the ligaments. This morbid product could be easily scraped off, and brought to view the spongy tissue of the bone, destitute of cartilage as well as of compact outer shell. The spongy tissue thus exposed, was red and softened, and could easily be penetrated by the scalpel. Small patches of cartilage still remained at the margins of the articular surfaces, which were only loosely adherent to the subjacent spongy tissue, the exterior shell having been absorbed. Between the outer condyle and the small head of the humerus, a deep, ulcerated excavation, capable of containing a white bean, had been formed. The surface of the posterior fossa of the humerus, lodging the olecranon, was rough and bare. The articular surface of the ulna presented similar appearances to the os humeri, with two or three



superficial excavations at the bottom of the greater sigmoid fossa. The surface of the coronoid process and of the olecranon, as well as the inner margin of the sigmoid fossa, were studded with spiculae of newly-formed bony matter. The head of the radius was more completely deprived of cartilage and bony shell than the parts already noticed, and their place supplied by a thick layer of gelatinous deposit.

After the dressing of the wound the limb was placed nearly at a right angle on a flat splint padded with cotton, with a joint at the elbow allowing it to move edgewise. By means of this splint the arm was suspended from the ceiling after the patient was conveyed to his bed. This arrangement afforded great comfort; the limb swinging clear of his body allowed him to vary his position within certain limits, an advantage he could not enjoy in any other way, compatible with perfect rest of the new joint. Sixty drops tinct. opii were then given.

The patient at first suffered a good deal of pain, and was treated with opiates, and there was an oozing of blood from time to time, but these symptoms subsided in a few days. After six days the tension and redness had disappeared, and the ligature had come away. The suppuration was moderate and of healthy character. A slight synovial discharge escaped from the old opening, below the head of the radius. In less than a month the wound was nearly healed; there was no pain in the elbow from motion, and the new joint had acquired considerable firmness. The patient gradually acquired the use of the arm to the extent of being able to flex the elbow and bring his hand to his head. After this he had a slight attack of erysipelas, but the further progress of the case continued favorable.

The limb gradually acquired increased strength and facility of motion. The power of grasping bodies with the hand, which had been very much impaired by the disease, was recovered in a good degree; pronation and supination could be performed almost to the original extent; the patient was able, unassisted, to raise the hand to the head, and could handle a broom in sweeping, carry half a pail of water, and perform other useful functions to his own great satisfaction. He was also sensible of progressing improvement in his limb. His general health was good; the only symptom of which he complained was a stricture across the chest. He was discharged this day, Feb. 1st, 1845, to return to his family at Buffalo.

*Remarks.*—The reason for preferring in this case, the operation with a single longitudinal incision, to an incision in the form of the letter H, or to the crucial incision, more generally recommended by authorities, was with a view to preserve undivided the lateral connections of the tendon of the triceps with the fascia investing the fore-arm, which must necessarily be sacrificed by either of the other modes of operating. The important advantage of so doing was, that a point of action would be preserved for the triceps muscle, which might compensate in a good degree for the sacrifice of its connection with the olecranon. All the other essential objects of the operation, such as the preservation of the ulnar nerve, &c., were attained by this method, without any increased disturbance of the soft parts, or embarrassment in its several stages. The subsequent progress of the case could scarcely have been more favourable under any circumstances, and from the experience derived from this case, together with one reported in No. VIII of "New York Medical and Surgical Journal," of April, 1841, in which the H incision was employed, I should be disposed decidedly to give preference to the method adopted in the present instance. Rather more time, perhaps, is required for this operation, but the great advantage already noticed should certainly be considered more than an equivalent. The subsequent condition of the patient, after the lapse of more than a year from the operation, was ascertained by my brother, Mr. Edward Buck, and the result was most favourable.

ART. 64.—*Treatment of Distortions of the Limbs and Spine not connected with Caries.*  
By SIR B. C. BRODIE, BART.

(*The Dublin Medical Press*, Dec. 23, 1846, from the *Lancet*.)

I know of no reason why the treatment of the rickety affection of the spine should be different from that of the rickety affection of the legs and thighs. Of this last I see a great number of cases. In a large proportion of them heavy

instruments of steel have been already applied with a view to reduce the curvature. In others, the same thing has been recommended, either by instrument-makers or surgeons, but the machinery has not yet been applied. Now, what is the effect of this mode of treatment? The original curvature is probably removed, but in order that this object should be attained, the instrument must make pressure on at least two points, one in the limb above, and the other in the limb below, and at each of these points a curvature is produced which did not exist before, so that there is simply an exchange of one curvature for two others. Then the instruments are a great weight and incumbrance to the child. He cannot drag them about so as to take such an amount of exercise as is necessary for the maintenance of the general health. They harass and torment him; and as they are always liable to break, and be otherwise out of repair, they are an endless trouble and expense to the parents. There is only one form of the disease in which, according to my experience, the use of instruments is at all justifiable, and that is one of very rare occurrence, in which the flexure is confined to the superior epiphysis of the tibia, the tibia below the epiphysis being bent outwards, making an angle more or less obtuse with the femur, so that the sole of the foot is with difficulty placed on the ground. With this single exception, I have never seen a single case of rickety curvature of the lower limbs, in which, if the health could be improved, and the general vigour of the system maintained, the curvature did not disappear spontaneously without any kind of local treatment being had recourse to; while, on the other hand, under a continuance of bad health, every kind of local treatment has been ineffectual. I generally recommend that the child should live in the country rather than in a crowded city, that he should be as much as possible at the sea-side, that he should take some preparation of iron from time to time, the bowels being at the same time carefully regulated, that he should use a shower-bath every morning, cold in summer but with the chill off in winter, and that he should live on a plain but nutritious diet. In the early part of my practice I advised that he should be encouraged to crawl on the floor rather than to use his feet; and that instead of running about out of doors, he should be taken into the fresh air in an open carriage. I am now convinced that this advice was wrong, that the general health cannot be maintained without exercise, that the more the limbs are used the better chance is there of the necessary quantity of phosphate of lime being deposited in the bones, and that as the bones become harder, so will they most certainly regain their proper figure, in spite of the weight which they have to sustain. Even in what might be termed a bad case of rickety affection of the limbs, three or four years, and in slighter cases a still shorter period, will generally be sufficient for this beneficial change to be brought about. From what I have already said you may be aware that I have a more limited experience of rickety disease as it exists in the spine than as it exists in the extremities; but nevertheless I have seen enough of it to be satisfied that the plan of treatment which is the best adapted to the one case is also the best adapted to the other.

#### ART. 65.—*New Modes of Amputating the Penis.*

1. By M. DE ARGUMOSA. After amputation of the whole of the penis, M. Argumosa remarks, the patients cannot void their urine without a part of the liquid dribbling down the scrotum: they are obliged to crouch or kneel in order to perform this function. The habitual use of a gum elastic catheter remedies this unpleasant consequence, but very imperfectly: for, however well proportioned its diameter to that of the urethra, the urine will always filtrate between the contained and containing body.

M. Argumosa suggests the following proceeding to obviate this inconvenience. A longitudinal incision is made with a convex bistoury from the inferior part of the urethra, along the scrotal raphe to the perineum. The double scrotum is thus separated. Another semicircular incision proceeds from the superior extremity of the first, divides the skin round the base of the penis, and finishes at the point where it commenced. All the tissues are then divided until the corpora cavernosa are reached. These are dissected to their insertion at the ascending ramus of the ischium, and the operation is terminated by cutting through the

remaining tissues. A small slit is then made in the urethra for the purpose of widening it, and to facilitate the introduction of the catheter.

As the skin of the scrotum and the dartos contract considerably, the space left between the lips of the incision is as large as if an elliptical portion of skin had been removed. After having dissected the integuments of each incision, the scrotal border is united by suture to the perineal border. In this manner each testicle is inclosed in a distinct pouch, with a cleft between them, and a large opening which gives free passage to the urine.—*Encyclograph. Med.*, Dec. 1846.

2. By Dr. RIZZOLI. One of the most serious accidents attending the amputation of the penis, is the impossibility of finding the urethra after the division of the part, the excess of integument being one of the causes of this. M. Rizzoli proceeds by drawing towards the pubis that part of the skin which covers the dorsum, while an assistant draws that which covers the under part of the skin towards the glans; the bistoury is then applied to the inferior part of the organ, and directed obliquely from below upwards, and from behind forwards, so as to cut the canal slanting. The direction of the instrument is then changed, and the corpora cavernosa divided perpendicularly. It will be understood that the bistoury is not removed from the part, and the pain of the operation is not prolonged for more than an instant. The integuments having been divided in this manner, they cover the corpora cavernosa above without masking the urethra below. The urethra being divided obliquely, presents a section so large that it is impossible not to recognize it at once.—*Annuaire de Méd. et Chir.*, 1846.

3. By M. RICORD. After amputation in the ordinary way, enough skin being left to cover the corpora cavernosa and no more, the surgeon seizes with forceps the mucous membrane of the urethra, and with a pair of scissors makes four slight incisions, so as to form four equal flaps; then, using a fine needle, which carries a silk ligature, he unites each flap of membrane to the skin by a suture. The wound heals by the first intention: adhesions form between the skin and mucous membrane; and these textures become continuous, a condition analogous to what is observed at the other natural outlets of the body. The cicatrix then contracting—instead of operating prejudicially, as in the old method—tends, on the contrary, to open the urethra.—*Miller's Practice of Surgery*, p. 595.

When, in the case of a short stump, inconvenience results from inability to direct the stream of urine properly, and in a sufficiently outward jet, the deficiency of the organ may be temporarily compensated by the use of a mechanical adaptation, a funnel-shaped canula, of sufficient length, the base resting on the pubes.

[It is to be feared that M. Argumosa's method would produce more inconveniences than it is intended to obviate. M. Ricord's plan is well calculated to prevent the tendency to contraction in the orifice; and M. Rizzoli's, to prevent the accident to which he alludes.]

#### ART. 66.—*New and successful Method of treating Prolapsus Ani.* By Dr. HAKE.

(Condensed from the *London Med. Gaz.*, Feb. 1847, p. 322.)

The method consists in returning the bowel or hemorrhoidal tumours with great care after the daily motion; in assisting its return by means of soap lather; in applying a coil of moist sponge firmly upon the anus, and, while retaining it there with one hand, bringing the nates together by means of a broad strip of adhesive plaster, as in approximating the edges of a wound.

This method Dr. Hake has now tested in several cases; it has never failed of success.

[The following is extracted from a letter of a patient who first put the plan to trial, and by whose ingenuity it was first conceived.]

"Take a piece of sponge four or five inches long, an inch and a half wide, and half an inch thick, the more elastic the better; roll this, in a damp, but not wet state, pretty tightly, so that the roll, if relaxed, would be ready to spring back into its full length, and it will then make a roll of some little substance, round, but still soft, and its length, when thus rolled, will of course be an inch and a half. Apply it, then, lengthwise, to the anus, so that it may be pressed, about the centre of it, quite home and firmly to the part. Taking care that it may remain so,



stretch a length of adhesive plaster, about fourteen inches long, and three and a half wide, more or less, straight across the nates, rather low down, and contrive so that while the plaster adheres on one side, you press the other side closer to its opposite, before you fix the length finally where it is to remain. Then sit down, at first gently upon it, and it will become very firm and fast, so long as the plaster is good. These two pressures constantly going on, do the work without any inconvenience worth speaking of; I mean the roll of sponge always striving to unwrap itself, and the cross-band of adhesive plaster always keeping it from doing so by holding the nates sufficiently close together. The working is perfect with a little use and management. I never put this on until I am going about, or to take exercise, whether walking, riding, or driving. In the evening, I take off the plaster, but leave the sponge in its place, where it has got by that time so firmly fixed by gradual spreading and swelling, that there is no danger that anything short of great exertion will loosen it, and it is of course more comfortable to do without the plaster when it is not wanted. The sponge should be washed in cold water every time it is taken off, and in cold weather the plaster should just cross the fire before it is put on; in moderately warm weather it will adhere of itself, especially if it is sat upon for half a minute. The same plaster is better the second day than even the first, and will do even the third, where economy is an object. Wash the parts where the plaster goes every morning, or oftener, with cold water, or water and vinegar, and the skin will never suffer. If the plaster leaves something sticky behind it, when it is taken off, rub it with a very little spirit of wine, and the towel will remove it.

"If there be an irritation about the anus, or the gut that comes down, wash it with vinegar and water, and the relief will be wonderful, and that part of the evil soon cured. This wash cannot be too much praised for this purpose, for piles, and for the like."

ART. 67.—*Hypertrophy of the Septum Nasi successfully treated.*

By M. BRULET, of Dijon.

(*Revue Méd. Chirurg. de Paris*, Février, 1847, p. 110.)

This affection is so rare that it has not been mentioned by authors, and both its diagnosis and treatment have to be determined.

"A boy, 10 years old, was brought to me," the author remarks, "to be relieved of a tumour seated in the nasal fossæ, which were obliterated by it. The tumour was as hard as bone, and seated immediately at the external orifice of these cavities; it was manifestly developed in the cartilaginous septum, forming a plug like a hard ball, of the size of a small nut. Regarding it as an hypertrophy of the cartilage, I believed that it might be removed. I proceeded in the following manner: I separated the inferior part of the septum even unto its junction to the upper lip; a cut with seissors was sufficient for this. I then cut away with a tenotome all the hypertrophied part; with one point of suture reunion was immediately effected, and it was impossible to perceive where the operation had been performed to relieve the child of this singular obtrusion."

We have but once met with an analogous case. A child of 10 years old was believed to have a polypus. The right nostril was half obstructed by a reddish, hard, rounded projection, which manifestly projected from the cartilaginous septum, and yet it was not a simple obliquity, since, in the left nostril, the septum maintained its normal direction. As the obstruction was not complete, and the mucous membrane appeared a little swelled, we contented ourselves with prescribing slight cauterization, with nitrate of silver, and have not seen the child since.

The "Annales de la Société de Médecine d'Anvers," for January, 1847, contains a case, if not identical, at least analogous to that of M. Brulet. It is described as follows.

*Obliquity and considerably increased length of the cartilages of the septum nasi; resection of a part of the cartilage; disappearance of the deformity.* By M. HEYLEN. J. C., aged 21 years, had from youth a very disagreeable deformity, consisting in a deviation to the right of the inferior part of the cartilage of the septum nasi, and a

too great length of this cartilage, which formed a tumour in the right nostril, projecting from a line beneath the sub-septum, without any change in the relation of this to the other parts of the nose. Besides the deformity, pain was produced by the motions of the mouth. For a long time we hoped to rectify the cartilage by dilatation; but its length prevented success. We then proposed to resect the projecting portion of the septum. An incision made on the right side of the cartilage allowed the mucous membrane covering the projecting part to be dissected from both sides, and the projection to be separated with scissors. The resection of the cartilage was easily effected, but the tenuity of the mucous membrane opposed the reunion of the edges of the wound, and we had to introduce the end of a small sound, protected with agglutinative bandages, into the right nostril, to keep the septum in place during the cicatrization.

Three days after the operation no inflammation had occurred; the septum was in a greatly improved position, and its obliquity was no longer perceptible externally. In nine days cicatrization was complete, and the deformity had quite disappeared.

The fear of making a cicatrix under the septum of the nose, and thereby increasing the obliquity, induced us to choose this mode of operating. Still we think there would be no risk in making an incision of the septum laterally, in dissecting the cartilage from both sides, separating the parts, and then uniting the wound, to obtain cicatrization by the first intention.

ART. 68.—*Strangulated Congenital Hernia, in an Infant seventeen days old. Operations for Hernia at the extreme periods of life.* By Professor FERGUSSON, King's College, London.

(From a Report of a Discussion at the Royal Med. and Chirurg. Soc. Lond., Jan. 17, 1847.)

The patient, a child 17 days old, had been perfectly well until the evening of December 6th, when it suddenly became fretful, and from that time up to the evening of the 8th, when seen by Mr. Fergusson, its sufferings seemed to increase. There was a painful tumour in the region of the left inguinal canal, and symptoms of strangulated hernia. The taxis had been tried without effect, and the indications seemed sufficient to warrant an immediate operation with the knife. On opening the sac, a teaspoonful of turbid serous fluid escaped, and a portion of small intestine was exposed.

The testicle was observed at the lower end of the sac. The stricture was divided, and the bowel easily pushed into the abdomen. The patient, soon after the operation, went to sleep; in the course of three hours there was a copious evacuation from the bowels, and all suffering seemed to have ceased. In the course of a fortnight there was a firm cicatrix, with no tendency to further protrusion.

The author remarks, that the tightness of the stricture had so far impeded the circulation in the cord and testicle, that the veins were greatly distended. The colour of these parts was purple, and the testicle was somewhat swollen, and not unlike a small sloe. He states his belief that it is the prevailing opinion that inguinal hernia in an infant is usually congenital. To show that this is not always the case, he exhibited an example of very large protrusion of intestine in a boy only two years of age, wherein the distinction between the tunica vaginalis testis and the proper hernial sac is clearly shown. Mr. Cæsar Hawkins had operated for hernia upon a child under seven weeks of age. It was brought into the hospital in all but a dying state. The hernia had been strangulated some days. The patient was pale and comatose. The operation, however, was successful; but the child became again subject to hernia after two or three years. In one case, in which a hernia was strangulated in a child *three weeks* old, he feared that he should have had to operate; but the strangulation was eventually removed by constantly dropping ether on the hernial tumour. In a case at 22 months of age, the operation was required. He had seen several cases under puberty requiring this proceeding, and had operated successfully on a patient *ninety-nine* years of age.

[Mr. Long has recorded (London Medical Gazette, June, 1846, p. 171) a successful operation for congenital scrotal hernia at six weeks old.]

ART. 69.—*On the Division of the Tendo Achillis.* Professor Stromeyer has lately published the following propositions, in which he lays down the indications for, and the manner to proceed in, dividing the tendo Achillis:

1. The tendo Achillis ought to be divided with a small thin knife, with a sharp point, and slightly rounded, employing the subcutaneous section, and cutting from within to without, taking care to make but one puncture of the skin.

2. The tendon must be entirely cut through, or the operation will be unsuccessful.

3. When other muscles or the plantar aponeurosis are retracted at the same time as the tendon, the former must always be divided before the latter.

4. After the operation the wound must be dressed with compresses, bound on with a bandage in the figure of eight.

5. With adults, on the fourth or fifth day after the operation, and with children, on the third or fourth, the first dressing must be removed, and if (as is often the case) the wound is found to be healed, it must be opened again; this must never be done when there is great ecchymoses, or when the wound suppurates.

6. Before putting the foot in the machine for extension, the limb must be surrounded by a sound bandage, and some pads of cotton must be placed on all the parts that are to be submitted to great compression.

7. Extension must be proceeded with gradually and slowly, lessening it each time it gives pain to the patient.

8. The dressings must be removed if the patient suffers much and continued pain in the parts compressed, in order to avoid excoriations, erysipelas, or mortification of the tissues.

9. Immediately upon taking off the dressings the limb must be enveloped in wool.

10. It ought to be known, that all those who have the tendo Achillis divided, have felt a sensation of cold and numbness, which is sometimes limited to the heel, sometimes extends over the whole limb. This sensation gradually diminishes, and generally disappears entirely by the sixth or eighth day.

11. The first day or the next morning after the operation, a viscid sweat of a disagreeable odour comes out on the foot, although the patient has never previously been subject to perspiration of the feet.

12. In placing the foot in the extension machine, it ought to be put in such a direction as to form a right angle with the leg; and this position ought to be maintained for eight days. After this period has elapsed, the limb must be enveloped in a circular bandage, and the patient must not be allowed to make any attempt to walk before the fourth week. Without this care, the limb will swell, the wound become irritated, and perhaps even the new tissue will give way.

13. It is impossible to name precisely the duration of the treatment. This must in some degree depend on the state of the patient, the degree of the deformity, and the extensibility of the articular ligaments.

*Prov. Med. and Surg. Journ.*, Jan. 27, 1847.

ART. 70.—*Case in which Heat was employed to Coagulate the Blood in an Aneurismal Sac.*

Quoted by Dr. BELLINGHAM, from the Philosophical Transactions of 1826.

(*Dublin Med. Press*, Nov. 18, 1846.)

The case was one of aneurism of the external iliac artery: the vessel had been tied upon the distal side of the sac, September 16, 1825, but as the pulsation continued to be strong, and the tumour to increase in size, Sir E. Home resolved to endeavour to coagulate the fluid blood in the sac by means of heat. Accordingly, on the 23th day after the operation, "he introduced an acupuncture needle into the centre of the sac where the pulsation was most violent, and the fluid state of the blood most distinctly felt; the needle was passed through a small orifice in a bar of steel, and was heated by a spirit lamp, the integuments of the thigh being guarded by means of cork. The application was continued for fifteen minutes; the patient felt heat and pain in the centre of the tumour, but not severe, and the pulsation diminished; on withdrawing the needle, the orifice was marked by a



single drop of coloured serum. In half an hour intense pain was felt in the thigh, but this was not only removed in ten minutes by twenty drops of laudanum, but the thigh and leg became more easy than they had been for the previous twelve hours, and the throbbing in the sac was reduced to an undulation.

"For two days the tumour was easy, and the pulsation had become less under the punctured part than higher up towards the belly. The tumour not diminishing, the operation was repeated on the 34th day from tying the artery; the needle and bar of steel being double the size of those before used, and the application was continued for thirty-five minutes. The internal heat was greater than before, and the pulsation in the tumour much diminished. The needle was with difficulty withdrawn, a coagulum as hard as sealing-wax, the size of a pin's head, being firmly attached to the middle of the needle. The pain the operation produced subsided in ten minutes, the internal heat continued twenty-four hours, and the tumour had now a solid feel: the patient was quite easy for two days, but on the third the pain and pulsation returned, also the inward pain in a still greater degree than while the needle was immersed, and the tumour was extremely tense. Under these circumstances, on the 41th day after tying the femoral artery, I repeated the application with the needle and steel double the size of those last employed; the heat felt internally was very great, but the pain was not much increased. After it had been immersed twenty minutes, the pulsation all at once stopped, and the needle was immediately withdrawn; the pain in ten minutes went off, and the patient was quite easy. From this time there was no pulsation in the tumour, which, to the feel, appeared solid, and therefore I considered the progress of the aneurism arrested. This was in some measure proved by the pulsation remaining violent in the internal iliac artery down to the part pressed upon by the sac, but no further."

Some time subsequently gangrene attacked the foot of the affected side, which extended up the limb, and the patient sank forty-six days after the last application of the heat. On a post-mortem examination, "the coagulum in contact with the sac was found to be similar to that usually met with in large aneurismal tumours: within that there were innumerable thin firm laminæ, and the innermost portion was in the state of jelly."

#### ART. 71.—On *Exostoses and their Treatment*. By M. Roux.

(Condensed from the *Revue Médico-Chirurg. de Paris*, Feb. and March, 1847.)

Under the term exostoses, pathologists have confounded—1, Simple, permanent, or chronic hypertrophy of the whole or of a part only of a bone; 2, osteosis, with a circumscribed swelling of the affected bone; such as is so often observed in constitutional syphilis; 3, aneurismal tumours of bone; 4, sarcomatous swellings of bone; 5, degeneration of bone with tumours, denominated by Sir A. Cooper "fungus or medullary exostosis;" 6, tumours organized like the osseous tissue itself, elevated above the surface of the bone in the manner of the natural apophyses, or in the form of large tubercles, produced from the external surface on which they appear to be implanted.

The term exostosis belongs properly to the latter. Exostoses generally occur singly, but occasionally more than one is met with in the same or in separate bones. Effusion into the bursa mucosa sometimes takes place over the exostoses, as in the following case:

A man, aged 22 years, presented himself, in December, 1843, with a hard, slightly-mammillated tumour, continuous with the femur at the posterior and inferior part, resembling a large apophysis at the commencement of the popliteal space. It scarcely raised the superimposed skin, although nearly as large as a child's thumb. On examining it carefully by separating the muscles between which it was placed, it was ascertained to be attached to the femur by a contracted base, a kind of thick pedicle. It was not congenital, but was first observed a few years previously, and after growing rapidly it remained stationary for about eighteen months or two years. Recently a new symptom had presented itself; a quantity of liquid formed between the projecting part of the tumour and the exterior soft parts. This liquid appeared to be contained in a small membranous point placed

immediately over the osseous tumour, which had in consequence appeared to increase in size. This complication was no other than a small synovial collection, analogous to those which so frequently form over the patella, the olecranon, and the external malleolus, from slight contusions or habitual pressure, as shown by its having become rapidly absorbed after the continued application of a strong aqueous solution of hydrochlorate of ammonia. The patient was discharged after the absorption of the fluid, as its situation forbade the extirpation of the tumour.

[M. Roux gives a resumé of his memoir on the following conclusions:]

1. Among the different tumours of bones, there are some to which alone the name of exostosis should be applied, and which must be carefully distinguished from all those which have been comprised under this denomination.

2. Exostosis consists principally, like the bones, of a spongy or areolar tissue, with a thin rind of compact substance; or entirely of a compact tissue, very hard, and, as it were, eburnated.

3. An exostosis of this kind adheres to the bone upon which it is developed by a contracted base in the form of a short pedicle, and proportionally large to the size of the tumour.

4. After a time they cease to grow, and never exceed a certain degree of development.

5. Generally their definitive bulk is proportional to the size of the bone upon which they are implanted.

6. Generally they have only a contiguous relation with the soft parts upon which they are situated; sometimes, however, they adhere to them.

7. They do not diminish in size, and they preserve indefinitely their primitive structure; at most their tissue acquires more density by time, the same as the bones do when they are forming.

8. According to the place they occupy, sometimes they constitute simply a deformity; at others they cause a greater or less impediment to the functions of the organs which they border upon; sometimes they prevent the accomplishment of these functions.

9. Ablation is almost always practicable. The exceptions are where their position is inaccessible.

10. In nearly all cases ablation is indicated, either to remove a great deformity or to put an end to habitual suffering, or to re-establish the regularity of the functions of the parts.

11. In most cases it can be practised without previously exposing the tumour, and without difficulty.

12. But the operation is sometimes attended with injurious consequences, either on account of some peculiarity in the seat of the tumour, or in its relation to the neighbouring parts, or on account of a bad state of the patient's constitution; generally, however, it succeeds.

[Dupuytren does not distinguish these varieties of diseased bone, nor does he thus limit the application of the term exostosis, as will be seen by reference to his work just published by the Sydenham Society (p. 408). He gives five cases of exostosis on the ungual phalanx of the great toe, and states that he has operated on as many as thirty similar cases. Previous to his time, the morbid growth in this situation had been usually mistaken for a wart, and mischievously treated as such by cauteries; or it has been mistaken for the nail growing under the skin. Dupuytren's sixth case in the same work appears to be one of very general hypertrophy of the bone; at all events, it could not be regarded as exostosis, according to the definition above given by Roux; his ninth and last case is a very interesting one of "Exostosis on nearly all the bones," (p. 414,) of which class of cases he has seen many instances; he does not attribute them to a venereal taint, but to some irregularity of the nutritive process, "the cause and effect being probably associated, as it is in instances of similar excrescences growing from certain trees."

ART. 72.—*History of a Case of Spina Bifida successfully treated by Puncture and Pressure.* By C. HAWTHORNE, Esq., of Sandon.

(*Dublin Med. Press*, Dec. 9, 1845, p. 378.)

M. G. was born on the 2d of October, 1824, with a tumour about the size of an Orleans plum, situated between the last lumbar vertebra and the os sacrum, and containing a transparent fluid. On pressure the fluid receded, and its being confined within the spine did not appear to produce any ill effect on the child. For a length of time a small pad of lint was immediately applied, secured by a piece of lead plaster, spread on leather, to defend it from the acrimony of the urine and from accidental friction, over which was placed a pasteboard, of the width of the loins to keep the pressure even. The tumour was examined and the dressings were removed every other day, the object of this proceeding being not to apply pressure, but to assist the integuments in resisting the pressure of the fluid contained in the cavity of the spine, and to prevent the distension of the dura mater until the child was able to undergo operation, which was about seven weeks afterwards. If the child be in good health, the longer the operation is deferred the more doubtful will be the result. To promote a cure, if possible, I made up my mind to draw off the fluid, and apply pressure to the part; to depress the membranes of the sac as nearly as possible in contact with the aperture in the spine, so that adhesion or thickening of the integuments might take place, and enable them to resist the pressure of fluid contained within the spine. The limbs of the child were perfect; it used its legs and was as active as other children of the same age; and the head was not enlarged, but well formed. My plan was to lay the child on the belly, across the nurse's knee, the head rather lower than the nates; for should the operation be performed with the head a little elevated, the fluid might escape too quickly, and occasion fatal syncope by the sudden effect produced on the brain. The nates being a little raised renders it also more convenient for arresting the escape of fluid, by compressing the orifice with the finger, and for drawing it off a little at a time, should the little sufferer's strength fail, or the shock be too great to proceed with the operation. It is very necessary to watch carefully the countenance of the child, as it is a more certain guide than the pulse. The fluid being connected immediately with the brain, the effect of its evacuation is instantly perceptible in the child's features. The operation, in the case I relate, did not appear to give any pain. The puncture was immediately made safe by applying a pad of lint, well secured by small strips of frankincense plaster, and a pad formed of cork, secured in the same manner by larger strips of the same plaster; over which a large piece of pasteboard was bound on by a roller round the body, as the least liable to be thrown off by accident. On the 24th of November I punctured the tumour with a flat needle, passing it under the integuments, about one inch from the base of the tumour, and drew off two ounces, by measure, of transparent fluid. The child appeared much exhausted after the operation: but recovered itself after sleeping an hour, and became as lively as before. On the 8th of December the operation was repeated, and two ounces more were drawn off, with much the same symptoms as on the first occasion. On the 15th I removed one ounce; on the 22d I drew off six drachms of fluid, the symptoms being much the same; on the 30th I drew off one ounce when the child became feverish, which state continued for two days. Mild aperients were administered, and the bowels freely acted upon by a saline mixture, taken every four hours, which restored her usual health and liveliness. On January 6th, 1825, six drachms of fluid were removed; and on the 20th nine drachms were drawn off; a few minutes afterwards the child threw up the contents of the stomach, and became faint for some time. She recovered during the day, but continued weakly for several days. From this time I relied upon pressure applied by means of a piece of tin, formed to the shape of the loins, with holes drilled round to secure a little padding to prevent injury to the back. One which I used had a small box or hollow in the centre, containing a strong wire-spring, secured to a small piece of tin, about the size of a crown-piece. It did not answer very well, as it was frequently thrown on one side by the motion of the body. I afterwards applied a cork pad, secured by strips of frankincense plaster,



and the tin over it was made secure by a bandage round the pelvis. The tumour appeared much diminished in size, and I could not make up my mind to resort again to the puncture of it.

On the 18th of April I consulted Mr. Hodgson, of Birmingham, on the case, and he agreed with me in relying on pressure, unless the tumour should increase in size. The child's health continued good.

On the 24th of February, 1827, she became very feverish, and on removing the dressings from the loins I observed two small pustules formed on the tumour, which was then about the size of a small bean, depressed in the centre of the opening in the spine. The pustules formed two ulcers, which gradually healed, with mild dressings, in about a fortnight; the pressure also was continued, and the patient kept still. She complained during the time of great pain in the head, particularly in the back part; and she declined walking, saying she could not move her legs. These symptoms gradually disappeared as the ulcers healed. The medicines administered were, three grains of calomel at bedtime; infusion of senna next morning, and a saline effervescing mixture every three hours; and in a few days these unfavourable symptoms disappeared.\*

April 26th, 1827. The child's health remains good; she grows, and the tumour appears diminished in size.

March 13th, 1831. She had an attack of catarrh during the day, and considerable fever came on, with severe pain in the head. She described the pain to be like a fire burning on the top of her head. She likewise complained of inability to walk, or move the inferior extremities; and in the evening she became delirious, which induced me to remove the dressings from the loins, when I found the adhesive plaster in contact with the tumour, and had occasioned considerable inflammation. I applied linen immersed in cold water to the part, when the delirium instantly ceased, and she became composed. I afterwards applied chalk cerate, spread on lint, continuing the pressure until these alarming symptoms disappeared.† The bowels were freely acted upon, and she slowly recovered her health and spirits. She is a very clever, amiable little girl, and displays great precocity of mind.

March 17th, 1836. I discontinued the application of the tin to the loins, and substituted one of Salmon and Ody's trusses; which she continues to wear to this day, Nov. 14th, 1846, without any other application, with the exception of a little lint between the pad of the truss and the spine. There are very trifling remains of the tumour; but I do not think it safe to discontinue the use of the truss. She takes considerable exercise, walks, without complaining of fatigue, ten or twelve miles during the day, and enjoys herself in the dance, or any other exercise.

The menses appeared in the sixteenth year of her age; she is now in her twenty-third year, a well-formed, fine young woman, possessed of a strong mind, very amiable, and much esteemed.

ART. 73.—*Extraction of a Needle from the Urethra by a new Method.*  
By Dr. RAYNAUD, of Montauban.

(*Annuaire de Méd. et de Chirurg. Pratique*, 1847, p. 119.)

A child, 8 years old, introduced a needle, head foremost, into the urethra, which was followed by acute pains in the perineum and anus. A finger in the rectum felt the head of the needle through the substance of the prostate gland. It was moveable, and compression at the same time across the perineum and on the head of the needle, according to Dieffenbach's plan, failed to promote its passage.

An assistant having previously introduced a finger into the rectum, so as to compress the bladder, to prevent the needle passing into that organ, I introduced a silver catheter as large as the meatus urinarius would permit. The catheter passed easily, and met the foreign body in the membranous portion, continuing into the prostatic portion, which presented no great obstacle to its introduction, but the

\* I attribute the appearance of the pustules to accidental friction, as I did not apply fresh dressings oftener than once a fortnight, unless the child complained.

† This again was owing to using adhesive instead of frankincense plaster, the resin contained in the former being the exciting cause of the mischief.

canal contracted upon it violently. With a finger first introduced into the annus, and then passed along the perineum, strong compression was made on the catheter, so as in a manner to embrace the walls of the urethra, and to assist this contraction. I drew the catheter back by degrees and very slowly: it was, in fact, pushed forwards by the contraction of the canal. The needle followed the catheter, and, on the removal of the latter, was observed in the fossa navicularis, whence it was easily extracted with forceps.

ART. 74.—*Amputation at the Shoulder-joint for Axillary Aneurism.*

By JAMES SYME, Esq., Professor of Clinical Surgery.

(*The Monthly Journal of Med. Science*, Dec. 1846, p. 401.)

In the beginning of July Dr. Cunningham, of Glasgow, called upon me with a gentleman suffering from an axillary aneurism; of which the following history was given:—The patient, 50 years of age, about a fortnight before, when getting hastily off a carriage, had made a false step, and nearly fallen backwards. In the effort to prevent this, he was conscious of throwing his left arm upwards and backwards with great force. No inconvenience was noticed until a few days after, when he felt a difficulty in keeping his arm close to the chest, and discovered a swelling in the armpit, which throbbed or pulsated. He immediately applied to Dr. Cunningham, who recognized an axillary aneurism.

I found the aneurism filled the axilla, quite circumscribed, and distinctly pulsating. The pulse, at the wrist, was rather weaker than in the other arm. The complexion and general aspect of the patient were such as are usually supposed to denote disease of the heart; the pulse was irregularly intermittent, and the action of the heart was perceived over a larger extent than could be considered natural. But it was stated that there had been no alteration for a long while in the appearance of the patient, or in his ability for exertion, which was represented to be that of the most perfect health; and I could not detect any distinct evidence of serious organic alteration in the heart. It, therefore, seemed to me that, although the case could not be considered in any view as favorable to the success of an operation, it was, nevertheless, not one in which the patient should be refused the chance of escape which might be thus afforded from the fatal result of his disease, which otherwise appeared all but certain.

He lost no time in coming to Edinburgh, for the purpose of submitting to the operation.

On the day of his arrival I remarked that the pulse throughout the affected arm had become very weak; and on the following day I could not detect it either at the wrist or in the tumour; which, during the few days which had elapsed since I first saw it, had acquired a great increase of size. The prospect of spontaneous coagulation derived from this change would have made me delay the operation, even if all other circumstances had been favourable to its performance. But the pulse became very quick; the arm swelled to a large size from oedematous effusion, and excessive pain was felt throughout the limb. On the following day another unpleasant symptom was presented by a diffused blush over the fore-arm, of that peculiar hue which is wont to precede mortification, resulting from the inflammation of parts imperfectly supplied with blood. On the morning of the 13th, the arm, from the elbow downwards, suddenly became cold and devoid of sensation. The redness, leaving this part, ascended towards the shoulder, the pulse could hardly be counted, and there was every sign of speedy sinking under the violence of constitutional reaction. It was, therefore, with no less surprise than satisfaction, that, during several succeeding days, this apparently hopeless condition was observed to assume gradually a more promising character. The arm which, from the time it had become cold, had been simply wrapped in flannel, regained its proper temperature; the redness of the skin disappeared; the pain in a great measure subsided; and the patient resumed the state of tranquillity that had existed previously. The swelling of the arm also, which had attained an enormous extent, especially towards the axilla and shoulder, which it raised almost to the patient's ear, and stretched strangely outwards from his side, sustained a marked diminution.

In consideration of these encouraging changes, the hope of a spontaneous cure was again entertained; and the pulsation, which could be perceived only by the ear, was ascertained to be confined to an extent so small, that there could be no doubt as to coagulation having taken place throughout a large portion of the cavity. But on the back part of the shoulder, where the skin had been extremely distended, when the swelling was at its height, and had not since either regained its natural consistence or lost the purple colour then assumed, there now began to be presented the appearance of a slough. It was hoped that this might be the effect of pressure limited to the integuments, and separation of the dead part was anxiously watched. In the course of a short time the worst fears were verified by a gradual enlargement of the aperture, exposing to view a mass of coagulum and sloughy muscular substance, through which arterial blood began to ooze and stain the patient's shirt.

Upon the 16th of August I requested my colleague in the hospital, Dr. Duncan, together with Dr. Cornwall, who had taken the ordinary management of the case, to consider what could be done to prevent the obviously impending hemorrhage, which threatened to prove speedily and almost instantly fatal. Ligature of the artery was quite out of the question, as the arm, though its temperature was restored, had not regained either sensation or voluntary motion, and, independently of all other objections to this operation under existing circumstances, would certainly have been deprived by it of the scanty vital power still remaining. I therefore proposed amputation at the shoulder-joint, which met with approval. The patient having been brought to the edge of his bed, I made an incision from the acromion downwards and backwards through the sloughy aperture, and, from the same point, another downwards and forwards, so as to join their terminations at the lower part of the axilla, and form two nearly equal flaps, which being held aside, allowed the disarticulation to be readily completed. As pressure could not be effected upon the vessel above the clavicle, in consequence of its elevation by the tumour, a fearful gush of blood issued from the cavity of the aneurism when laid open, but was instantly arrested by Dr. Duncan, who placed his thumb upon the part from which he felt the jet proceed, and retained it there until, by the application of eight or ten ligatures, I prevented hemorrhage from the smaller vessels. Upon examining the state of the axillary artery, we found no distinct orifice, but merely a funnel-shaped expansion, where it communicated with the aneurism. I therefore made an incision from the upper extremity of the wound quite to the clavicle, in the direction of the vessel, cut through the tendon of the pectoralis minor, and, by careful dissection of the condensed textures in which it lay imbedded, exposed a sufficient portion of the artery for safely applying a ligature. This having been done, the edges of the wound were brought together, and retained by stitches, with the assistance of compresses and a bandage.

The patient bore the operation well, made no particular complaint after it, and steadily advanced towards recovery, although the separation of sloughs was not completed until the end of a fortnight. But while this process was gradually accomplishing, the cavity rapidly contracted, so that when the whole of the dead parts were cast off, it was nearly closed. The ligature came away on the 15th of September, and the patient then returned to Glasgow, where he was soon afterwards able to resume the duties of a public situation which he holds in that city. [Mr. Syme makes the following allusion, we presume, to Mr. Seton's case. (Abstract, Vol. II, p. 118.)]

The records of surgery should no longer be encumbered with the preposterous and incredible allegation, that the rupture of a trivial subcutaneous branch of the femoral artery caused and maintained a pulsating aneurism of the groin. The serious arguments which took place relative to the treatment of an aneurism, that plainly could have had no existence except in the imagination of the operator and his colleagues, would have been amusing unless associated with considerations of a very painful kind, and afford a remarkable example of that event to which the judgment may be biassed by an erroneous impression. It was, doubtless, an absurdly exaggerated account of the primary hemorrhage that suggested the idea of aneurism—led to its supposed detection—prompted the untoward operation, and was still urged in defence of this most unnecessary proceeding, even after dissection had shown that while the trunk of the artery remained perfectly undisturbed



the only vessel that could be discovered to have any connexion with the injury was a little nameless twig, equally incompetent to establish an aneurism as to emit "a jet of blood three feet from the orifice of a long, narrow and oblique wound."

ART. 75.—*Successful Extirpation of a Polypous Tumour of the Larynx.*  
By Professor EHRMANN, of Strasbourg.

(*The Monthly Journ. of Med. Science*, Dec. 1846, p. 458.)

M. Ehrmann, Professor of the Faculty of Medicine, at Strasbourg, gives the following details of a case of this disease. As far as we are aware, it is the first in which an operation has been performed, at least successfully. Caroline M., 33 years of age, the mother of two children, had always enjoyed excellent health till about four years ago, when, in the autumn of 1840, it was first observed by herself and those around her, that there was a slight change in her voice, which became rough and hoarse. This change was accompanied by no pain or any difficulty in articulation or respiration. Subsequently there was nearly total aphonia, and, what was remarkable, this aphonia increased very much towards the termination of two pregnancies, and again diminished after delivery. After some time, quick respiration came to be accompanied by the sound of a valve opening and shutting alternately, and occasionally, during deglutition, some drops of liquid entered the larynx and excited violent attacks of cough. During these attacks the patient occasionally expectorated small portions of tissue, similar to the tumour which was subsequently removed by excision. In the month of March a sudden attack of dyspnoea supervened, which lasted for a short time, but recurred repeatedly with violence, and was instantly induced by the slightest cough or effort of vomiting. Tracheotomy was immediately proposed by M. Ehrmann, but a delay of nearly two hours took place, from the entreaties of the friends of the patient; but the symptoms having increased during that time to an alarming extent, their consent was at length obtained.

The crico-thyroid membrane, the cricoid cartilage, and the two first rings of the trachea were divided, and a tube introduced, with instant relief to the patient. After forty-eight hours an incision was made from opposite the os hyoides downwards along the mesial line, to join the former incision. The two sides of the larynx were then separated by the knife, and the cavity being freed from the blood which had collected in it during the operation, the polypous excrescence was discovered attached to the left inferior ligament of the glottis, when it was seized with a pair of forceps and excised at its base. The tumour was of the form of a small cauliflower, presenting here and there rounded and fleshy granulations on its surface. Its precise measurements are not stated: but, from a figure which M. Ehrmann gives, it appears to have been about three-fourths of an inch in its longest, and half an inch in its shortest diameter.

After the operation the edges of the wound were brought together, and the tracheotomy tube left in its place, from which it had not been removed during the operation. The tube was finally removed in two days, and, twenty-one days after the operation, the wound was entirely healed, and the patient made a perfect recovery, with this exception, that the aphonia remained.

M. Ehrmann remarks that the hoarseness and roughness of voice are the first symptoms which show themselves in the course of this disease, amounting, after some time, to a complete loss of voice. The peculiar cough, similar to that of croup, generally accompanies these other symptoms. The sensation of a foreign body in the larynx during expectoration and deglutition, is sufficiently characteristic. Dyspnoea is an invariable symptom; it may commence insensibly, and increase gradually, or appear suddenly, accompanied by an insufferable feeling of suffocation. The only sign, however, which can be looked on as certain, is the expulsion, in coughing, of particles of the substance of the tumour, or when, by means of a small mirror, we can see the tumour engorged in the glottis, or feel it with the point of the finger.

ART. 76.—*Closure of several Varices of the Left Leg by means of the Electro-Puncture.*  
By Dr. MALANI, of Varese.

(*Monthly Journ. of Med. Sciences*, Nov., 1846, p. 377.)

The patient was an organ-builder, 50 years of age, of a healthy and robust constitution, who went into the hospital at Varese, on the 2d of August, 1846, to be cured of a varix, which caused him so much pain as to prevent him from following his occupation. It had existed for four years. The whole of the internal saphena was considerably dilated, and presented ten different knots, some as large as a small nut, others about the size of a bean, while some smaller ones extended from the internal malleolus to two fingers' breadth below the knee. The trunk of the saphena continued enlarged to about the inferior third of the thigh. A considerable knot could besides be distinguished at the external and upper part of the calf. Animated by the favourable result which he had seen to follow the application of electricity, by M. Ciniselli, to a large popliteal aneurism, Dr. Malani determined to try it in this case. Having prepared a voltaic pile of twenty-six discs, of about two inches in diameter, he introduced two needles into the tumour, situated at the inner and middle part of the calf, and having previously applied two ligatures firmly around the leg, above and below the tumour, united the needles with the two poles of the battery by means of a copper wire silvered over. The sitting lasted twelve minutes. The patient experienced, at the first, a considerable shock, which became afterwards gradually less, with a continued sensation of pricking and burning. The tumour withered, became small, and however much the saphena and its branches were compressed above it, it could not be made to increase more in size. In its interior there could be felt with the finger a degree of hardness, especially around the needle communicating with the zinc pole. Vinegar and water was afterwards ordered as a lotion to the whole of the leg. On the fourth, the electricity was applied to the trunk of the saphena, two inches above the knee, but the number of the piles having been increased to thirty-one, and the patient not being able to support the shock, five were removed. In the third application, made about the middle of the leg, the wires were passed through the eyes of the needles. There were twenty-four pairs of plates, and they were allowed to act for fifteen minutes, in which time there were formed clots, which extended two or three inches upwards, along the saphena, in the form of firm cylinders, and of unequal hardness. The fourth application was made to a varix higher up than the former. In four minutes hardness could be felt in the tumour, chiefly around the zinc needle. In nine minutes, the clot extended a finger's breadth towards the lower part. The sixth, seventh, eighth, and ninth applications lasted fifteen minutes, and gave the same results. In the last application the needles were fixed in two neighbouring tumours. In eight minutes clots were formed around the zinc pole, but the blood remained fluid around the copper pole. It was then determined to change the needles, introducing the first in the place of the second, and *vice versa*. In seven minutes, the other tumour, of the size of a filbert, was also closed up. At all the other times, it was only the zinc needle which offered any resistance in withdrawing it, but this time also the copper one was the same. By these means, the whole of the varices had disappeared in ten days.

Although the two points of the needles never touched each other, and sometimes were placed at a distance of an inch from one another, there never could be prevented from taking place a superficial cauterization of the skin, in the form of an areola around the two needles, always larger around the zinc one. Not even a plaster of wax, having only a small hole for the penetrating point, could prevent this occurrence. The treatment was supposed to be assisted by fomentations along the whole of the leg.

A varix of the size of a goose-egg, on the internal malleolus of the left leg of another patient, was filled with clot after two applications, and diminished to two-thirds of its size.—*Gazzetta Medica di Milano*, 29 Agosto, 1846.

ART. 77.—*Reduction of Dislocations of the Humerus and Femur.*  
By Professor SYME.

(*The London Med. Gaz.*, Oct. 2, 1846, p. 602, from the *Lond. and Edin. Month. Journal.*)

Mr. Syme records four cases of dislocation of the shoulder-joint (the forms of dislocation being mentioned only in one), two of which were of seven, and two of four weeks' standing, in which reduction was effected by means of traction by pulleys made in the direction of the long axis of the body. In two of the cases, the first attempt to reduce the bone failed, but its return was effected, without much difficulty, upon a second trial. In three of the cases, the head of the bone showed great disposition to leave the glenoid cavity after its reduction; but this appears to have been easily prevented by the application of a proper bandage.

Mr. Syme has discontinued the use of bleeding and tartar emetic previously to attempting the reduction of old dislocations, and employs the warm bath alone, as it seems to be sufficient of itself, and has not the disadvantage of being unpleasant to the patient either at the time or afterwards; the others, therefore, had better be omitted. The patients are kept an hour in the bath before the reduction is attempted. From the variety of directions which have been adopted by different practitioners for extending the bone, it might seem as if the degree of force were of more consequence than the line of its operation: while the truth, Mr. Syme believes, is, that success depends very much upon the limb being held, during the extension, near the side of the body, so as to relax the pectoral and dorsal muscles which constitute the margins of the axillary hollow.

Mr. Syme also gives a case in which he succeeded in reducing a dislocation of the head of the femur upon the dorsum ilii of five weeks' standing. After the usual preparation in the warm bath, the patient's limb was subjected to extension from the ankle without success, the lever afforded by the foot for causing rotation being obviously very inefficient, and the muscles and the back part of the thigh feeling extremely tense; the pulleys were then made to act above the knee, and speedily restored the bone to its place.

A case is also recorded of recent dislocation of the thigh-bone upon the dorsum ilii, where, during the process of reduction, the head of the bone escaped into the ischiatic notch. In more than one instance which has fallen under Mr. Syme's observation, the same change of circumstances occasioned the serious error of supposing that the bone had returned to its proper place, while it had merely shifted into the notch; and as that excellent authority, Sir A. Cooper, though he has warned us against the risk of this occurrence in reducing dislocation into the foramen ovale, has not noticed it with regard to the more common case of dislocation on the ilium, or pointed out the deceitful alteration of appearances so induced, Mr. Syme hopes the instance he has related will not be without use.

ART. 78 — *New and successful Operation for the Cure of Pseudarthrosis or False Joint.*  
By Professor DIEFFENBACH.

(*Reported by Dr. J. S. Bushnan, of Wiesbaden, to the Med. Times*, Jan. 16, 1847, p. 298.)

CASE I. In the winter session of 1845, a woman, thirty-three years of age, presented herself at the Klinik; she had broken her thigh fifteen months previously. On examination, the fractured limb was found to be nearly three inches shorter than its fellow, and much withered or reduced in size, except at the fractured part, where there was a soft, circumscribed and considerable swelling. The limb was moveable like the end of a flail, and with difficulty she dragged it after her as she moved on crutches; it was not only useless, but a positive inconvenience, causing her frequently to fall, and to stumble at every threshold; the poor woman earnestly desired its removal. There was some soft callus between the fractured bones in which they moved, as in a capsule, but no bony deposit. Dieffenbach caused the absorption of this glistly matter by rubbing the ends of the bones together, and thus setting up inflammatory action; and, this object effected, he attempted to produce bony union; not, indeed, by the usual and very uncertain routine of very close and accurate contact—removing the



ends of the bones by excision, escharotics, or setons. His experience of gunshot wounds had taught him, that when foreign bodies, as bullets, are lodged in bones, a great quantity of healthy and hard callus is always poured over them; and the experiments of Duhamel and Flourens had established the fact, which it had remained for the genius of Dieffenbach to turn to account. So, *having pierced the leg with a small scalpel down to the fractured bones, with a common gimlet, he drilled holes through each end of the bone, and about half an inch from each fractured extremity. Into each of these holes he introduced a small ivory peg, the same size as the gimlet, and strongly wedged them with a few strokes of a hammer.* The limb was then extended, placed in splints, and carefully bandaged. In ten days it was apparent, from the less degree of mobility between the ends of the fractured bone, that healthy callus had been thrown out; and so the ivory pegs were removed, and the wounds allowed to heal. In three months from the date of the operation, the patient walked without crutches, and was dismissed cured.

CASE II. A strong hard-working man, aged thirty-one, had a year previously broken his right humerus, at about its middle part, while employed on a railroad. No union had taken place and the limb was useless. The same treatment as in the former case was had recourse to; the bones were bored with a gimlet, small ivory pegs introduced, and at the end of ten days removed. In the course of treatment, however, Dieffenbach was not satisfied with the rapidity of the progress towards bony union; he therefore introduced smaller pegs for a few days; and so successful did the case prove, that, twelve weeks from the first introduction of the pegs, the man was in a condition to resume his employment.

CASE III. I had the satisfaction of examining this patient, and witnessing the operation. He was a robust and apparently healthy man, of forty years of age, who, eighteen months previously, had met with an accident upon a railroad, by which he was much bruised and his left humerus fractured at the insertion of the deltoid. The limb was perfectly useless and much withered; the false joint was capable of being moved in all directions, giving little or no pain. The limb bore the marks of setons and issues; and indeed the man had undergone a regular routine practice, under the care of the surgeons whom he had consulted. The operation was rapidly performed, as in the preceding cases, and the limb bandaged and placed in a sort of cradle. At the end of a week there was much swelling of the limb, and pain in the fractured parts, which were not as moveable as before; on the twelfth day it was still more difficult to move the parts, and on attempting to do so it appeared as if it were a very stiff joint: then the pegs were removed, and I did not again see the case. In my next letter, I doubt not, I shall be able to report most favourably of it, and ultimately to assure the medical public of its successful termination.

Let us compare these satisfactory results with the uncertain and unsuccessful practices which have hitherto, in similar cases, been resorted to. All are agreed as to the difficulty and danger and want of success in the operation recommended by Celsus, and practised in modern times, of sawing off the ends of the bones. Dr. Physick's proposal to introduce a seton between the fractured extremities, is recorded to have been oftener unsuccessful than otherwise. Cutting down to the bones and rubbing them with caustic potass, has signally failed; and, indeed, it may be said, that hitherto amputation has been the only certain cure for pseudarthrosis. Dieffenbach's operation, on the other hand, is neither dangerous, nor difficult, nor painful; and it may be performed with every prospect of success, by any one with sufficient anatomical knowledge to enable him to avoid the great vessels and nerves of the limb.

ART. 79.—*Cure of Prolapsus Ani without Operation.* By Dr. JÄESCHE, of Minsk.

(*Gazette des Hôpitaux*, Dec. 10, 1847.)

After having four times tried Dupuytren's operation unsuccessfully, Dr. Jaesche has resorted to another method to fulfil the same indications, viz., the contraction and induration of the mucous membrane and relaxed skin of the anus, their more intimate union with the subjacent parts by adhesive inflammation, and the increase

of the tonicicy of the sphincter. The author believes he has discovered this method in diluted sulphuric acid.

In a young man who was hypochondriacal and constipated, and for many years affected with prolapsus ani, he touched the anus with a plug of charpie dipped in the acid, and continued the application some millimetres within the rectum. The violent pain produced gave way after a few hours to an application of charpie moistened with olive oil, and the excoriations healed in a few days. A week afterwards the prolapse returned, when the cauterization was repeated and there was no return of the disease for many months, nor during the continuance of the patient in the hospital.

Dr. Jaesche has employed the same treatment with permanent advantage in many analogous cases.

[The nitric acid is not less efficacious than the sulphuric acid, and it has the advantage of producing neither the pain nor the ulceration which results from the employment of the latter.]

ART. 80.—*Treatment of Fissures of the Anus*, by M. DIDAY. M. Diday recommends the patient to apply to the anus, night and morning, with the end of the finger, a portion of ointment, about the size of a cherry-stone, composed as follows:

R. Axungiae - 15 grammes,  
Tannin - - 1 gramme;

increasing the proportion of tannin gradually to three grammes or more, according to its effect on the sensibility of the part. To apply it efficiently the patient should push his finger as far as possible without forcing the sphincter, and there leave the ointment. Where fissures are situated higher, a solution of tannin may be injected into the rectum with a small syringe. The quantity of liquid introduced should be as small as possible, in order that it may be retained for some time. In both cases the patient should experience some degree of heat, and smarting continues for some time after the application.

*Annuaire de Thérapeut.*, 1847, p. 170. See, also, *Report on Surg.*, vol. iv. p. 254.

ART. 81.—*The Removal of Loose Cartilages from the Joints*. By ROBERT LISTON, F. R. S., Surgeon to University College Hospital.

(In a letter communicated to Sir P. Crampton. Condensed from the *Dublin Quart. Journal*, Feb. 1847, p. 35.)

M. Goyrand, of Aix, from all accounts a very accomplished surgeon, has proposed an operation for the removal of these bodies, "*en deux temps*," and he sets about the first step of it by fixing the foreign body. Having pinched up a large transverse fold of skin, he plunges a very straight, sharp-pointed bistoury under this, and directs the instrument so as to divide the capsule upon the foreign body. This is, if possible, forthwith pushed out of the joint into the subcutaneous cellular tissue. Some days afterwards he cuts the cartilage out, by simply making a "*boutonnière*" through the skin.

This is, undoubtedly, a vast improvement upon the old operation of pulling aside the skin, cutting this and the deeper tissues freely upon the foreign body, extracting it, if possible, and then permitting the covering to resume its place, so as to render the wound so far indirect. Here there was always a risk of the edges inflaming, of their not uniting, and of a suppurating track being thus established in connexion with the synovial cavity. Hence inflammation of the joint, destruction of the cartilages, and a cure (?) by ankylosis, or amputation of the member. This proceeding I practised long ago in some three or four instances; in the last, the patient nearly lost his life, and with difficulty was enabled to preserve his limb. I should be very sorry to repeat the process.

M. Goyrand's operation has, so far as I know, been but seldom attempted, either on the continent, or in this country. It is very difficult of execution, and is likely enough to fail, even in the hands of surgeons in the habit of performing many and trying operations. In the case of a young woman in the hospital, some years ago, I failed most signally, by following M. Goyrand's method, in removing

the foreign body from the joint. I have seen right to modify the proceeding, and have succeeded most perfectly and satisfactorily in four cases. In the case of a young gentleman, I removed no less than five of these bodies at various times. The movable body is secured in the outer and upper part of the synovial bag, if possible, by the pressure of the points of the fingers and thumb of one hand. The knife, the blade of which is delineated of the full size, is made to penetrate the skin, by directing its point perpendicularly to the surface, and at somewhat more than an inch below the substance to be acted upon. By a lateral motion of its blade, the integument is freely separated from the adjacent parts, so as to make a bed for the lodgment of the cartilage, somewhere over the space between the tendon of the biceps and the vastus externus. The point of the instrument is then directed to the foreign body, and made to impinge upon it, so as to divide all the interposed tissues and the synovial capsule *freely*, somewhat in the direction of the limb. The instrument is then withdrawn, and the assistant places the point of a finger on the minute opening. The knife is again introduced towards the outer side, and so managed as to complete a pretty large crucial incision of the immediate coverings of the body to be removed. This done, nothing remains but to pass the point of the instrument under the mass, to entangle it, to withdraw it from the joint, and to carry it into the bed previously prepared for it. A bit of plaster is put on each of the openings, and strict rest of the limb enjoined for a few days. There is no occasion, in my opinion, for farther interference. In one case, to satisfy the patient and his friends, one of several foreign bodies, after having been out of the joint for some time, was cut out from under the skin. The patient unfortunately had a hemorrhagic diathesis, and the wound kept on bleeding for some days, so as to cause a good deal of alarm. I did not then fully appreciate the powers of the gallic acid in arresting those passive oozings. The wound at last healed, and he is now contented to carry several other cartilages lodged under the skin, in the vicinity of the joint, and which do not there cause the slightest annoyance.

The cartilaginous bodies I have thus extracted, have been of various sizes and shapes; some the size of beans, and others much larger; some pretty globular, whilst others again have been very flat, roundish, and at least three-quarters of an inch in diameter.

ART. 82.—*Rhino-plastic Operation to supply the Left Ala Nasi.*  
By Professor DIEFFENBACH.

(From the *Med. Times*, March 6, 1847, communicated by Dr. Bushnan.)

A man, about 40 years of age, was introduced to the theatre. The left ala of his nose was entirely wanting, and a ragged surface extended round the margin of the cheek, the nasal bone, and septum. The columna was unimpaired. With one stroke of the scalpel, the edges of the sore were entirely removed, and a groove formed in the cheek. Dieffenbach then roughly formed, in sticking-plaster, the shape of the absent ala—much larger, however, than that of the right side—and applying it to the forehead, he dissected from it a similar piece of skin, leaving a long narrow slip or connecting tongue, extending between the eyebrows to the nose, to carry on the circulation. Letting this flap hang down over the nose, he drew together, with strong ligatures, the sides of the great wound he had made in the forehead; and I was surprised to remark how nearly they approximated. He afterwards told me that he had ceased to make incisions under the hair on the temples, in order to diminish the tension of the parts, and to allow the lips of the wound to come into closer contact, according to the method recommended by Celsus; since doing so caused much greater irritation to the system, and retarded recovery, while it did not proportionally ameliorate the appearance of the scar. Lint was placed in the wound, and tightly secured by sticking-plaster. An incision was now made along the ridge of the nose, connected with the left side of the long neck of the flap, which had much contracted in its dimensions, and curled inwards, as, I think, Petit, Hill (of Dumfries), John Bell, and others, have remarked the scalp to do when removed. The parts having been well washed with water, all bleeding ceased, and all coagulated blood removed, the flap was turned round,



its long neck fitted into the groove prepared for it on the ridge of the nose, and its broad part adjusted, so as to replace the absent ala, to whose cut margins it was securely attached by needles and ligatures. The man left the theatre with his appearance much improved, having a well-shaped and perfect, though much enlarged nose.

Dieffenbach's great experience has taught him, that transplanted parts always shrink after union with the surrounding part has been accomplished; hence, it is necessary in these operations, not only to make the flap of a size much larger than will eventually be required, but also to calculate with nicety its probable diminution. I carefully watched this case; for the first few hours the nose was dressed with pledgets soaked in cold water, after which it was freely exposed, without dressing or covering of any sort. About twenty-four needles and ligatures kept the new organ *in situ*, and at the end of eight days, so perfect was the union, that all these had been withdrawn. Dieffenbach told me I had witnessed one of his best cases; and truly the improved appearance of the man assured me that few could be better. I did not witness the termination of the case; but so soon as the wound on the forehead had entirely healed, the twist and the connecting neck that had been introduced between the eyebrows and along the ridge of the nose would be removed, the edges of the wound brought together with a few needles, and the cure completed. No sensation was retained in the transplanted part, and Dieffenbach said it would be several months before it would be re-established, and its tardy return will be easily understood, when we reflect that sensation everywhere depends on certain nervous filaments, called sensiferous, extending between the part in question and the sensorium, and that these filaments are necessarily cut through in the operation; nor is it until they have become connected with other nervous trunks proceeding to the sensorium that sensation is re-established. A transplanted part is thus for some time in the condition of the greater number of the organs of the body, living by virtue of its ganglionic nerves alone, while few or no sensiferous nerves extend from it to the sensorium.

ART. 83.—*Contraction of the Œsophagus cured by temporary Dilatation.* A man swallowed by mistake a quantity of dilute nitric acid; a considerable portion of it was rejected by vomiting, and the specific poisonous effects of the acid were not produced; but the pharynx and the superior part of the Œsophagus were denuded of epithelium, and a superficial ulceration resulted; suppuration supervened; this was followed by cicatrization, and a considerable coarctation of the tube. An Œsophagus bougie, about the size of the little finger, could be passed to the stomach, but the contraction was sufficient to prevent deglutition, and was still increasing. Fearing that the canal, left to itself, would become the seat of a permanent contraction, M. Blandin acted upon the same principle as in strictures of the urethra, by methodical dilatation, intending to associate with it cauterization, if necessary.

Elastic Œsophagus sounds were employed; after passing the stricture they were allowed to remain ten or fifteen minutes; the operation was repeated twice daily, progressively increasing their size, and in three weeks the patient was cured.

*Journal de Méd. et de Chirurgie, Feb., 1847.*

ART. 84.—*Aneurism by Anastomosis in the Cavity of the Anterior Nares, cured by the Actual Cautey.* By Professor WILMOT, M.D., Surgeon to Dr. Stevens' Hospital, Dublin.

(Condensed from the *Dublin Quart. Journal*, Feb. 1847, p. 31.)

Mary Moore, aged 30, of delicate appearance, was admitted into Stevens' Hospital on the 2d of June, 1845. When ten years of age, after leaping from a height, she was seized with a profuse flow of blood from the left nostril: it recurred several times for about a week, and was at length stopped by surgical treatment. About four years and a half ago she observed a small tumour not larger than a pea, on the inside of the left ala nasi. The formation of this tumour was preceded and accompanied by pain, and occupied the entire left side of the nose; she experienced a sense of fulness and tension about that side of the head, and in a few

months the tumour increased so much as to attract the notice of her friends. I found the tumour, which was about the size of a small olive, attached to the inner surface of the ala of the left nostril. It was of a dark blue colour, soft, smooth, and equal on its surface; and upon pressing it an obscure pulsation could be felt in it. The coronary artery of the lip and the *lateralis nasi* pulsated strongly, and appeared to feed the tumour. She complained of headache, and a sense of weight and fulness about the left side of the nose. She remained in hospital at this time but for a very short period, having been obliged to return home for her confinement; but after the lapse of about four months she returned, and was again admitted. During her absence the tumour had increased in size, and the arteries connected with it had undergone an enlargement; the pulsation, also, which at first was rather indistinct, was now very evident. She says that during her labour, which was difficult and tedious, all these symptoms were much increased.

The tumour was punctured with a cataract needle, and through the punctures a small probe, coated with the nitrate of silver, was introduced. A rapid flow of blood followed each operation, but was soon stopped by pressure. The caustic was applied in this manner three or four times, and during the intervals astringent lotions and pressure were employed. This brought about some reduction in the size of the tumour; but it was not of long duration. In a very short time it acquired its former size, or, perhaps, became rather larger; the headache, also, became very great; with intense throbbing, not only in the tumour but round the entire left side of the head and face. She was again obliged to leave the hospital; she returned after an absence of nearly half a year. The tumour was now much larger, and had altered its oval shape to a round form. It bore some resemblance to a large hemorrhoid; it filled the anterior cavity of the left nostril, and extended a little beyond its margin; its free surface lay against the septum, and completely blocked up the passage. The tumour preserved the same blueish colour and smoothness on its surface, and its pulsation could now be seen as well as felt. All the circumjacent arteries were enlarged, the *lateralis nasi* was dilated to the size of a crow-quill, the coronary artery of the same side was also greatly enlarged, and pressure on either of these arteries commanded the pulsation in the tumour. She complained at this time of want of sleep from the pain and throbbing in the head; vision had been rather dull in the left eye for some short time back.

Finding that all the symptoms were rapidly increasing, and that the several plans of treatment adopted were unsuccessful, we resolved on perforating the tumour with the actual cautery. The circumstance which led to this plan of treatment was the successful application of the instrument in the hospital to hemorrhoidal tumours, by Mr. Cusack. The operation consisted in perforating the tumour in two distinct places with a nail-shaped cautery iron. This was repeated six times, at intervals of fourteen days between each. After every application the tumour swelled, became painful, and in about three days pus was observed to ooze through the openings. By following up this plan the tumor gradually diminished, and the enlarged arteries lessened. At the expiration of three months she was discharged from hospital quite well. There was no trace of the tumour, the *lateralis nasi* artery could not be felt, and the other arteries which had been enlarged were restored to their natural size.

Since the hemorrhage occurred when the patient was a girl, before any tumour appeared, no bleeding took place from the nose through the entire progress of the case, though such an occurrence might naturally have been expected. Latterly, the extent of the tumour could not be accurately ascertained, in consequence of its filling up the anterior cavity of the nostril. The manner in which the symptoms subsided under the last plan of treatment proves that the tumour was circumscribed, and that the vessels connected with it were superficial.

#### ART. 85.—*Wounds and Injuries of the Abdomen.—General Conclusions.*

By G. J. GUTHRIE, F.R.S.

(*Lectures on some of the more important points in Surgery, 1847.*)

1. Severe blows on the abdomen give rise to the absorption of the muscular structures, and the formation in many instances of ventral hernia; this may, in

some measure, be prevented during the treatment by quietude, by the local abstraction of blood, and by the early use of retaining bandages.

2. Abscesses in the muscular wall of the abdomen, from whatever cause they arise, should be opened early; for although the peritoneum is essentially strong by its outer surface, it is but a thin membrane, and should be aided surgically as much as possible.

3. Severe blows, attended by general concussion, frequently give rise to rupture of the solid viscera, such as the liver and the spleen, causing death by hemorrhage. When the hollow viscera are ruptured, such as the intestines or the bladder, death ensues from inflammation.

4. Incised wounds of the wall of the abdomen of any extent rarely unite so perfectly (except, perhaps, in the *linea alba*) as not to give rise to ventral protrusions of a greater or less extent.

5. As the muscular parts rarely unite in the first instance after being divided, sutures should never be introduced into these structures.

6. Muscular parts are to be brought into apposition, and so retained principally by position, aided by a continuous suture through the integuments only, together with long strips of adhesive plaster, moderate compression, and sometimes a retaining bandage.

7. Sutures should never be inserted through the whole wall of the abdomen, and their use in muscular parts, under any circumstances, is forbidden; unless the wound, from its very great extent, cannot be otherwise sufficiently approximated to restrain the protrusion of the contents of the cavity—the occurrence of which case may be doubted.

8. Purgatives should be eschewed in the early part of the treatment of penetrating wounds of the abdomen. *Enemata* are to be preferred.

9. The omentum, when protruded, is to be returned, by enlarging the wound, through its aponeurotic parts if necessary, but not through the peritoneum, in preference to allowing it to remain protruded, or to be cut off.

10. A punctured intestine requires no immediate treatment. An intestine, when incised to an extent exceeding the third part of an inch, should be sown up by the continuous suture in the manner recommended in pages 26 and 27.

11. The position of the patient should be inclined towards the wounded side, to allow of the omentum, or intestine, being closely applied to the cut edges of the peritoneum. Absolute rest, without the slightest motion, should be observed. Food and drink should be restricted when not entirely forbidden.

12. If the belly swells, and the propriety of allowing extravasated or effused matters to be evacuated seems to be manifest, the continuous suture or stitches should be cut across to a certain extent, for the purpose of giving this relief.

13. If the punctured or incised wound is small, and the extravasation or effusion within the cavity seems to be great, the wound should be carefully enlarged, and the offending matter evacuated.

14. A wound should not be closed until it has ceased to bleed, or until the bleeding vessel has been secured, if it be possible to do it. When it is not possible so to do, the wound should be closed and the result awaited.

15. A gunshot wound penetrating the cavity can never unite, and must suppurate. If a wounded intestine can be seen or felt, its torn edges may be cut off, and the clean surfaces united by suture. If the wound can neither be seen nor felt, it will be sufficient for the moment to provide for the free discharge of any extravasated or effused matters which may require removal.

16. A dilatation or enlargement of a wound in the abdomen should never take place, unless in connection with something within the cavity rendering it necessary.

17. When balls lodge in the bones of the pelvis, they should be carefully sought for and removed, if it can be done with propriety and safety.

18. In a wound of the bladder, an elastic gum catheter should be kept in it, until the wound is presumed to be healed; unless its presence should prove injurious from excess of irritation, not removed by allowing the urine to pass through it by drops, as it is brought into the bladder.

19. In all cases in which a catheter cannot be introduced, in consequence of



the back part of the urethra or the neck of the bladder being injured, an opening for the discharge of the urine should be made in the perineum.

20. The treatment of all these injuries must be eminently antiphlogistic, principally depending on general and local blood-letting, absolute rest, the greatest possible abstinence from food, and in some cases from drink, the frequent administration of enemata, and the early exhibition of mercury and opium, in the different ways usually recommended, with reference to the part injured.

ART. 86.—*Treatment of Lateral Depression of the Walls of the Chest.*

By BARON DUPUYTREN.

(Condensed from Mr. Le Gros Clark's Translation for the Sydenham Society, 1847.)

This deformity consists in a depression of the sides of the chest, varying in degree, and accompanied by a corresponding prominence of the sternum and abdomen anteriorly, and of the vertebral column posteriorly.

One remarkable point about these cases is, that they are almost invariably accompanied by a considerable enlargement of the tonsils. A not less frequent concomitant of the defect in question is pulmonary catarrh, and no disease to which children in this condition are liable is more frightful or dangerous than whooping-cough.

These deformities and their accompanying complications deserve careful attention, and require decided treatment at the hands of the medical practitioner; and the first point to be attended to applies equally to all cases of deformity of the osseous system, where such deviation from a healthy condition is referable to the softening of a scrofulous or rickety diathesis, viz., an invigorating diet and the exhibition of bitter drinks; at the same time great caution should be observed in carrying out this plan of treatment, as the existing mischief may be greatly enhanced by over-stimulating the system. The adjunct of local remedies will be found serviceable; and of all those that I have employed, I know not of any more efficacious than appropriate exercises for strengthening the muscles which connect the arms and shoulders with the chest, combined with frequent pressure, in a direction from before backwards on the sternum. With the above view, I direct my patients to employ both arms in raising a weight in a machine constructed for the purpose, for several hours daily. This apparatus is so arranged that a weight (which must be proportioned to the power of the individual for whom it is prescribed) is fixed to one end of a cord, which passes over two pulleys, the other extremity of the cord having a cross-bar attached to it, by which the machine may be worked. Further, the length of the cord should be such as to oblige the individual using the machine to rise on tiptoe when the cross-bar is seized, and to bend towards the ground before the weight is raised to its full height. In this way the objects of the exercise are best fulfilled, as both the flexor and extensor muscles of the arms, as well as the muscles of the chest, neck, and back are thoroughly brought into play.

In addition to the above measures, I am in the habit of directing that pressure should be made on the chest, so as to diminish the antero-posterior diameter of its cavity; and for this purpose I do not approve of the usual method adopted, in which the object is attained by a machine that is constantly worn for the purpose, and which is open to the objections common to all similar instruments acting by a spring or otherwise. I prefer the following plan, as free from the inconveniences alluded to, and offering the best prospect of success. It consists in the operator's placing himself by the side of the patient; and supporting the back with one hand (or with the knee by fixing it against a wall), whilst the other is placed on the most prominent part of the sternum; the latter is then pressed or pushed backwards, so as to diminish the antero-posterior diameter of the chest, which is immediately afterwards allowed to recover itself. These alternating movements should be made to correspond with the acts of inspiration and expiration; and after some little practice this proceeding will be readily accomplished by the common consent of both parties concerned. The exercise is accompanied by a sound resembling the rushing of the air into and out of a pair of bellows.

ART. 87.—*A Case of large Secondary Prostatic Calculus, removed by Perineal Incision.*  
By T. HERBERT BARKER, M. B.

(Read at the Annual Meeting of the Prov. Med. and Surg. Association. Condensed.)

John M—, aged 26, sent for Mr. Barker on the 25th of October, 1843. He was labouring under complete retention of urine, and complained of considerable pain in the urethra and perineum. The penis was very oedematous, with a fistulous opening on its under surface and towards the left side, about three inches from the extremity, from which a small quantity of purulent fluid was discharging. This opening first made its appearance about four days before the visit, followed by the escape through it of a considerable quantity of urine; but during the last twenty-four hours urine had ceased to flow.

The perineum presented some tumefaction and slight redness of the soft parts. On making firm pressure in its centre near the anus, a deep-seated hardness could be felt; and on attempting to move this hardened base from side to side, some degree of crepitation could be detected, as if produced by the limited movement of calculi firmly impacted together. On introducing a finger into the rectum, considerable enlargement was felt in the region of the prostate gland, and similar crepitation was also felt as far as the finger could reach in that direction. On introducing a probe into the fistulous opening, it passed readily about an inch and a half backwards and inwards towards the urethra, but it could not be brought into contact with any hard substance.

All that could be learned of his previous history was, that since he had been four years of age he had laboured under incontinence of urine, which had rendered him very offensive to society, and had long since induced him to abandon it as much as possible. Some years ago he had been a patient in the Infirmary, but without any relief. He had never suffered *very severe* pain, nor from retention of urine before the present attack, and urine had never flowed through any other than the natural channel before the formation of the fistulous opening four days before.

He was directed to maintain the horizontal position, to use fomentations of warm water to the perineum, to drink as little as possible, and to take simple aperients.

Oct. 26th. Mr. Barker again made a careful examination of the perineum and per rectum, which ended in the thorough conviction of the presence in the posterior part of the urethra of several calculi of large size. Another attempt was made to pass the probe further backwards through the fistulous opening, but with the same result.

*Operation.* The patient was placed in the position for lithotomy, and the calculi were removed in the following manner. The perineal integuments were rendered tense with the left forefinger and thumb, and an incision made through them together with the superficial fascia, two or three lines to the left of the raphe, commencing about two inches and a half from the anterior margin of the anus, and terminating within half an inch of this margin. On introducing the point of the finger into the incision, the calculus could be readily felt, and was cut down upon with the point of the bistoury, and the intervening soft parts were divided upwards and downwards to the entire extent of the first incision.

Observing that the several portions of the calculus were firmly wedged together, and that it was impossible, from its size, to remove it *en masse*, a lateral movement of the portions within view was had recourse to by means of the finger and thumb, for the purpose of loosening them, and with little difficulty the pieces forming the anterior narrower part of the calculus were removed, and some of those constituting the posterior and broader portion were disintegrated.

Having brought away several fragments with the fingers, others were grasped by the forceps and removed: but finding considerable difficulty in loosening three or four remaining portions, the left forefinger was introduced into the rectum, for the purpose of dislodging them from the prostatic part of the urethra, which being done, they were seized by the forceps and removed. The dislodgment of these last portions was followed by the escape of a small quantity of urine. Having satisfied himself by careful examination that no calculi were left behind, the parts were sponged, three points of interrupted suture were introduced, the peri-

neum was covered with lint, and my patient put into bed. He was directed to have but spare diet.

Ten P. M. Comfortable; free from pain. A mild opiate draught was prescribed. 27th. Free from pain, but suffering some anxiety in consequence of the place "*having burst*;" urine had accumulated in the cavity which had been occupied by the calculus, and had at length escaped between the sutures. There is very slight tumefaction of the perineum, and the œdema of the penis has somewhat subsided. The discharge from the original fistulous opening in the penis is very slight. An opiate at bed time. 29th. The wound is going on very favourably; urine escapes through the lower end of the incision. Removed the interrupted sutures. From this period to the next date he went on favourably, and the wound healed, with the exception of about half an inch of the lower extremity of the incision, through which the urine continued to flow. November 13th. A catheter was introduced into the bladder, through the entire length of the urethra, and secured in the usual manner. Two needles were introduced through the parietes of the unhealed part of the incision, which were brought together as accurately as possible by the twisted suture. He was directed to remain in the supine position. 14th. The urine has escaped through the catheter. The instrument having produced so much uneasiness as to prevent him from sleeping, was withdrawn, and he was directed to remain undisturbed. 16th. Urine dribbles away per urethram. The needles were removed, and he was directed to remain as quiet as possible a few days longer.

From this period the urine escaped by the urethra, but he was unable to retain more than about an ounce at a time. The wound healed soundly, and he went to work in eight weeks after the operation.

*Remarks.*—The calculi are *twenty-nine* in number, and weigh *three ounces, four drachms, and one grain, or 1681 grains*. They are of a whitish colour and porcelainous lustre and hardness. It is with some difficulty that any impression can be made upon them with a knife. The entire calculus was composed of these several portions closely cohering by curved faces, so that on any violence being applied to the mass it would readily break up, each portion presenting a conchoidal lustrous surface.

One of the largest calculi was forwarded to Dr. Golding Bird, for the purpose of being submitted to a chemical examination. That gentleman remarks: "Had I seen this calculus without receiving any history, I should at once have pronounced it prostatic. My view of the origin of this very curious form of concretion is, that the calculous material is deposited in cells connected with, or forming part of, the prostate gland, and that these enlarge as an increase in the amount of calculous deposit occurs, until the walls of the cells become exceedingly attenuated and ultimately destroyed. By the cohesion of calculous masses deposited in adjoining cells, the whole concretion is built up so loosely, however, that a slight blow will cause it to be disintegrated into its several component portions. It is identical in composition with the concretions occasionally found in glandular structures, (as salivary, bronchial calculi, &c.,) consists of phosphate of lime, with a rather larger proportion than usual of the ammoniaco-magnesian phosphates." An exactly analogous specimen exists in the extensive collection at Guy's Hospital. (No. 2148.)

The author wrote to Professor Owen concerning the existence of any similar calculus in the Museum at the College of Surgeons, and through the kindness of that gentleman, is enabled to give the following facts: "The largest prostatic calculus, though divided into four parts, which were separate in the prostate, may be regarded as a single one, as the four pieces, one large and three small, were coadapted by smooth surfaces. It is what may be termed a secondary prostatic calculus, being composed of salts deposited from the urine, not from the prostatic secretion; the salts being the mixed phosphates with a little urate of ammonia and carbonate of lime. The specimen is No. H, 13, in the collection." The history in the published catalogue runs as follows: "One large and three small calculi, having articulating surfaces. These calculi were taken from the prostate gland, which was converted into a cyst; they consist of the mixed phosphates, with a little urate of ammonia and carbonate of lime, and weigh 575 grains. One of the calculi protruded about one-tenth of an inch into the cavity of the bladder



through an ulcerated opening situated anterior to the natural opening of the urethra." Mr. Thomas Taylor, of London, states that the portions of bladder and urethra from which these calculi were taken, are likewise preserved in the Museum, and were presented by Mr. Lawrence.

In the monograph by Mr. Crosse, "On the Formation, Constituents, and Extraction of the Urinary Calculus," although several remarkable cases are related in which large calculi had been extracted from the prostatic portion of the urethra, reference could not be found to any case in which the calculi presented the same characters as the one which has been described. This author strongly recommends the removal of the calculus thus placed by a lateral incision in the perineum, where a staff can be introduced into the bladder, or by cutting upon the gripe where it cannot. The following cases are alluded to particularly bearing upon the mode of treatment adopted in the one just now described.

"In 'Essays and Observations, Physical and Literary,' vol. iii. p. 546, Dr. Livingston has related two cases of vesico-urethral calculus; in one the calculus was found post-mortem, in the other he operated by cutting on the gripe. The difficulties attending such an operation, where you propose to operate and cannot get a staff into the bladder, are shown in 'Medical Facts,' vol. viii. p. 126, also in an interesting case by Mr. Cheston of Gloucester, related in the 'Medical Records and Researches,' vol. i. p. 163. Under complete retention of urine, with a stone thus lodged, or a small stone impacted in the commencement of the urethra, the surgeon, being unable to get either catheter or staff into the bladder, may be compelled to cut into the urethra at its membranous part, and to incise the neck of the bladder, in order to give outlet to the urine, and at the same time to remove the calculus. I have met with examples of such practice being required. M. Deschamps removed a calculus, situated in the prostatic urethra and causing complete retention, by an incision, as in the lateral operation of cystotomy. (*Traité de la Taille*, tom. iv.) Sabatier (*Méd. Opératoire*, tom. iii. p. 136) observes that the Celsian method is preferable to all others when the stone, having lodged at the neck of the bladder, has gone on increasing so as to extend into the urethra and become prominent in the perineum; and Dionis (*Opérations de Chirurgie*, par La Faye, p. 221) previously made the very same remark."

This being an unusual case, not only from the fact of so large a calculus lodged and increasing in the prostatic urethra having been removed by operation, but from the mechanical structure and chemical nature of the calculus itself, the author wrote to Mr. Crosse concerning it, and forwarded the calculi for his examination. To that gentleman and his son he was indebted for having the several pieces put together, so as to build up the calculus as it existed in the urethra.

The entire stone is four inches and seven-eighths in length, and considerably larger at one end than at the other. The *larger* extremity had been situated posteriorly in the prostatic part of the urethra. Around the broadest part it measures four inches and five-eighths, from which it tapers to the other extremity, where it measures one inch and five-eighths in circumference. Midway between the two ends it measures three inches and a half. It is rounded and convex on the lower surface, or that which was nearest to the perineum, and the opposite surface is somewhat flattened and concave. It presents two curves—a larger one, the concavity of which is in the centre of the upper surface of the stone, and apparently corresponding with the curved shape of the posterior part of the urethra, and a smaller one in the opposite direction, near the anterior extremity. The surface is intersected with numerous angular lines, indicating the division of the stone into many pieces, which are well shown in the plate.

In another note the same gentleman observes that "a relapse is almost sure to happen in all cases of a large calculus removed from the prostatic urethra, because the urethra remains large and out of shape, leading to deposit from the urine lodging there; and also because the lining membrane of such cavity furnishes a mucous secretion which much disposes to deposit of fusible calculus."

The author has purposely refrained from treating of the bibliography and literature of the subject of similar prostatic calculi, and from a discussion of the manner of their formation, whether in the urethra by deposit from the urine, as is the opinion of Mr. Crosse, or in the cells of the prostate gland, as plausibly conjectured by Dr. Golding Bird, and have restricted myself to a concise description of

the case and its treatment, merely giving some elucidatory parts of the correspondence which has resulted from it.

[The state of experience in France on this subject is referred to in our 4th volume, p. 94, and quoted by Mr. Barker in this memoir.]

ART. 88.—*Spina Bifida*.—*Cure by Operation*. By W. B. PAGE, Esq., Carlisle.

(From the Author. Condensed.)

Anne Pattison, a child 21 months old, was brought to me in September, 1845, with spina bifida. The tumour was of a spheroidal form, measured in its greatest circumference seven inches, and at its base five inches, and was situated opposite the lower lumbar vertebræ. The skin covering the tumour, was marked by numerous irregularities, resembling cicatrices, one of which was considerably larger than the others; there were also several long coarse hairs, and a small patch of ichthyosis upon it. Fluctuation was distinct, but the tumour was not transparent, owing to the thickness of the integuments; the examination produced no pain, and it was found that the fluid passed readily from it into the spinal canal on the application of gentle pressure. The child appeared healthy and intelligent, had no paralysis, and was otherwise well formed. At the time of birth the tumour was about the size of a large walnut and had gradually increased. About a year since the tumour, was pressed upon by a medical practitioner, and its contents squeezed into the vertebral canal, which produced alarming cerebral symptoms, but no paralysis.

The almost uniformly fatal termination of this affection (a fatality probably but little, if at all, lessened by the means which have been adopted to remedy it) afforded but small encouragement for the employment of any active interference in this case. But while, on the one hand, the gradual increase of the tumour from the time of birth, and the somewhat unhealthy character of the integuments covering it, too plainly indicated that it was now progressing towards a fatal close; on the other hand, the general circumstances of the case seemed to warrant an attempt at cure, if such attempt were ever advisable.

The danger of operative interference being proportionate to the size of the communication between the interior of the tumour and the vertebral canal, I determined to endeavour, if possible, to diminish that communication before I attempted its removal. With this view I placed an elastic ligature of India-rubber around its base, just so tightly applied as to keep up a constant pressure, without occasioning any material inconvenience to the child. Soon after its application the tumour became inflamed on its surface, and through a minute opening a clear serous fluid escaped for several days, the tumour slowly diminishing at the same time. On the fifth day it was found necessary to remove the ligature, it having produced a ring of ulceration beneath it, in which it was imbedded. This wound very slowly healed, a strip of lint being kept constantly in it to prevent the adhesion of the abraded surfaces, as that would in a great measure have frustrated the end in view—namely, the contraction of the base.

The result of this proceeding was exceedingly satisfactory, inasmuch as the neck was reduced to four inches and one-eighth in circumference, and the tumour itself was much diminished.

In November it was agreed by Dr. Lonsdale (who from this time attended the case with me) and myself to repeat the application of the ligature, which was attended with very similar results to those on the former occasion—the same ulceration of, and slight oozing from, the surface. The ligature, however, caused a much deeper wound than before; and, after its removal on the fifth day, it assumed for a considerable time so unhealthy an appearance, as to give rise to much anxiety. An attack of scarlet fever about this time reduced the child's powers materially. The long continuance of the scarlatinous redness of the skin covering the tumour was remarkable.

The diminution of the tumour, which had on both occasions been observed, from the gradual escape of a portion of its contents, determined us to have recourse to acupuncturation, which, however, was unattended with benefit; and

subsequently, with a view of gradually evacuating the fluid, and also of inducing such an amount of inflammation as might cause adhesion of its walls, a seton was twice introduced. No amendment, however, ensued, and the irritation of the thread gave rise to unhealthy ulceration of the skin.

In March, the wounds having been for some time quite healed, the child's health much improved, and the parents extremely anxious for the entire removal of the tumour, its extirpation was resolved on. The circumference of the tumour was at this time six inches, that of its base three inches and a half.

On the 9th instant, assisted by Drs. Lonsdale and Coburn, I removed the tumour in the following manner: The child being held firmly and lying on its abdomen, an incision was made through the integuments, commencing from the base at its upper and extending downwards over the tumour until it reached its junction with the back at its lower part; a second incision, commencing and terminating at the extremities of the first, was then made, leaving an elliptical portion of skin attached to the tumour; the flaps of skin were then divided into two parts by an incision at right angles to the first, and very carefully dissected from the surface of the cyst, the walls of which were found to be in some parts very thin. The whole tumour being fully exposed down to its base, a strong ligature was tightly applied, and the tumour removed as closely as possible above it. The flaps of skin were now laid together, a dossil of lint placed over the wound, and a flannel bandage firmly applied round the body. A slight opiate was soon after administered, and the child passed a tolerably comfortable night. For a few days the urine and fæces were passed in the bed, but this was probably not dependent on any other cause than the child's fear of being disturbed.

On the third day the dressings were removed, when it was found that the flaps of skin were dead, but the wound appeared healthy. On the sixth day, the ligature, with its inclosed portion of tumour, came away, leaving a wound somewhat larger than a shilling, in the middle of which the membranes of the cord were distinctly seen. The child's state was now one of great peril. A pledget of lint was kept over the wound, and a flannel bandage constantly applied round the body; the child being at the same time kept as much as possible lying on its abdomen. The wound gradually contracted, and on the 15th of April, five weeks after the operation, was perfectly healed. Since this time the child has suffered no inconvenience; the cicatrix has much contracted, and now forms a firm covering and support to the spinal membranes. It is also worthy of note that the vacancy in the posterior walls of the vertebral column, has perceptibly diminished since the removal of the cyst—an effect somewhat similar to that observed after the operation for cleft palate.

The examination of the tumour demonstrated that it was a cyst of sufficient size to contain a small walnut, its walls being formed by an expansion of the arachnoid and dura mater, invested by the common integuments. A second cyst, containing a few drops of transparent, colourless serum, existed between the arachnoid and dura mater. The cyst varied considerably in thickness in different parts, the membranes being in some places much thickened, and throughout intimately united together, with the exception of that portion occupied by the few drops of fluid. No nerves were found connected with the interior of the sac.

The means adopted, in the foregoing example of spina bifida, are of course only applicable to those cases in which the base of the tumour is more or less pediculated, and of these there are but few in which such interference could be employed with any prospect of success, the cord, or its nerves, being, in the great majority of instances, connected with the interior of the cyst. But inasmuch as the tumour almost uniformly enlarges, until ulceration of its walls takes place, speedily followed by death, it is important to distinguish, if possible, those which have no such connections, and in which the tumour may be removed with no other danger than that resulting from the exposure of, and injury to, the membranes of the cord—a danger in itself sufficiently alarming, and which could only be rendered justifiable by the fatal nature of the affection it is intended to remedy. The absence of any morbid sensibility when the tumour was moved upon itself, or when pressure was exerted in any part of it, together with the perfect formation of the lower limbs, and the entire control over them, the bladder and rectum, were in the pre-



sent instance, considered sufficient evidence of there being no nervous filaments connected with the interior of the cyst, and probably the same diagnostic signs would furnish equally correct information in most, if not in all cases. Other circumstances concurred to confirm the favourable prognosis.

In the majority of those cases where the base of the tumour is its largest part, and where the probable absence of nervous connections justifies any interference, some degree of palliation only can be anticipated. The occasional evacuation of a part of the fluid in the sac, and the subsequent application of pressure; the introduction of a seton, and acupuncture, have each been attended with success in a few instances, where the tumour itself has been small, and the connection with the spinal canal of limited extent; and in all such cases these or other similar methods may be resorted to, although they generally fail to effect the desired end. In those cases where the tumour is large, and the want of osseous development considerable, by the application of a hollow truss, or some other well adapted support, and by the occasional abstraction of a small quantity of fluid on the slightest evidence of pain or redness in any part of the tumour, that distension, which would otherwise give rise to ulceration, and the sudden discharge of its contents, may be relieved, and the fatal issue deferred.

Even at a very advanced period, the withdrawal of a portion of the fluid may avert the impending ulceration of the cyst. A child three months old was brought to me, with a tumour extending more than half way across its loins, with the skin so much distended and inflamed at its most prominent part as to appear in imminent danger of rupture. I introduced a small trocar, and drew off six ounces of fluid, and subsequently applied a large pasteboard splint and bandage. On the following day the puncture was healed, and the inflamed portion of the skin was fast assuming a healthy aspect. This child died in convulsions twelve days after, probably from the effects of the operation, although, so long as I had an opportunity of observing it (eight days), there was no evidence of any serious disturbance resulting. In puncturing these tumours, it is important to remember, that the cord and its nerves are more generally connected with the middle and upper part of the tumour than with the sides and lower part, and that consequently the latter situation should be selected.

The instances of spina bifida, in which the skin and membranes have been sufficiently strong to support the distension, and in which life has not been curtailed by the presence of the tumour, although very limited in number, are sufficiently numerous to warrant no active interference, where the slow increase of the tumour and healthy appearance of the skin afford any probability of so favourable a result. Such a case came under my notice a short time since, in a child three years of age, who had a tumour in the loins the size of a foetal head, the increase of which has been so gradual (although no means have been employed to arrest it), and the appearance of the skin is so healthy and equable as to give reason to hope that she may live to a mature age. I also casually met with a boy about thirteen years of age, a few years since, with a tumour the size of an orange, situated over the lower cervical vertebrae, which had ceased to enlarge for several years, although it had been subjected to no treatment, and which occasioned no other inconvenience than that which must necessarily result from the presence of this appendage.

#### SECT. IV. RARE SURGICAL CASES.

ART. 89.—*Complicated Plastic and other Operations successful in removing an extraordinary case of Deformity of the Face from Scrofula.* By Professor DIEFFENBACH.

(From the *Med. Times*, March 6, 1847, communicated by Dr. Bushnan. Condensed.)

Dieffenbach related as follows one of the most dreadful deformities that can be imagined:—"It was late one evening that three strangers requested to see me—a man and two women; and one of whom, who was closely veiled, wished to speak to me alone. Her companions having retired, she seemed to cast her eyes around the room, to ascertain that no one else was present; and then, with some

hesitation, and without uttering a word, she slowly raised the thick black veil by which her face and head had been concealed and a great portion of her person enveloped. I had seen much in my life that was shocking, and, as I thought, the most hideous deformities of face and figure were so familiar to me that I could behold them comparatively unmoved; but here I started back, shuddering and horror-struck. A death's head, a skull with glistening eyes, red and everted eyelids, and a skeleton face, stood involuntarily grinning before me. The cheeks and lips were absent, and in their place a thin red skin covered scantily the almost denuded bones. In place of a nose was a large triangular hole, through which, when she gave utterance to sound (speak she could not) the tongue protruded, for the palate bones were gone, and the œsophagus was freely exposed to view. At the upper portion of this dreadful orifice, through which three fingers could be introduced, a red and bony process protruded, extending upwards between the remains of eyebrows, while its lower margin was the remains of the upper jaw, now reduced to a small and toothless bony rim; where cheeks had been, red and indurated cicatrices crossed each other in all directions, and, as I have said, ectropium existed to a great degree. This is no exaggerated portrait of a young girl of eighteen years of age, member of a noble and powerful family, but nevertheless the victim of scrofula.

"I stood late at night, and alone with this dreadful apparition—a foul thing, which forcibly reminded me of the prophet of Khorassan, when he raised his veil. Instead of a human voice, hissing and unintelligible sounds proceeded from the cavity in the face; and I drew back with horror as she advanced to place her finger on my nose. Well did I understand the appeal, and deeply did I regret my inability to ameliorate the condition of this unfortunate lady. When I had made her understand by signs (for she spoke but Polish, which I did not understand) that I could do nothing for her, an exciting scene followed. She cast herself before me in a state of the deepest mental agony, imploring by signs my assistance; and when I summoned her companions (one her brother, the other her governess) to assist in calming her, she hastily resumed her veil; for, for years she had not allowed her family to behold her deformity. The governess spoke French, and I told her I could do nothing but recommend a mask; and then I hastily withdrew from this strange midnight scene, the recollection of which will never be effaced from my mind.

"The next day I left Berlin for Vienna; and scarcely had I arrived there than the veiled lady again presented herself to me. She had heard of my departure, and had immediately followed me. Here I called in the assistance of the great dentist, Carabelli, with whose aid I succeeded in procuring a set of teeth and a false palate, which facilitated eating, and made her speech more intelligible.

"The more I considered this case the more I felt convinced that I could do nothing further, and that it was utterly impossible to obtain a nose or even a fleshy covering for the hole in the face. The bones of the forehead were nearly naked, and the thin, spare, and cicatrized skin of the temples was not sufficient for the purpose. A casual examination of the arm, however, showed much loose and thin skin, and as I raised a fold of it between my fingers, and pressed it into the form of a nose, the idea struck me that I might transplant a portion of it to a spot near the inner edge of the right eyebrow, where the skin was not so much destroyed, and afterwards remove it by degrees, in the same manner as heavy monuments are sometimes slowly transplanted from one place to another."

[Dieffenbach acted upon this idea, and proceeded to relate the steps of the operation, or rather series of operations, which extended over a period of eighteen months, exhibiting as much the skill and perseverance of the operator as the patience and confidence of the unhappy lady. A nose was formed from the skin of the upper part of the left arm, and that in a very novel manner. A triangular piece was marked out, about a third larger than the supposed size of the required nose; an incision was then made along its sides and upon the outer and inner thirds of its base. By subcutaneous dissection this triangular portion of the skin was separated from the muscle, but still left attached to the arm by its somewhat broad apex and the middle third of its base. The edges of the wound on the arm were then brought as much together as possible by straps: and the sides of the triangular portion of the skin turned inwards and properly secured. It was

three months before the parts had healed; and then Dieffenbach had obtained what may be called a triangular loop of flesh, attached by its base and apex to the arm. This was to form the new nose. The parts being healed, Dieffenbach proceeded to fix the prepared nose to the inner edge of the right eyebrow, which, as I have said, was thick and puffy. This he did in the old Taliacotian method, by detaching the apex of the new nose, or triangular portion of thickened skin, from the arm, uniting it *in situ* with the brow, and fixing it by sutures and appropriate bandages.

He had many doubts as to the success of the operation; and the great advantage of this mode of operating is, that if we at first fail in attaching a new nose to the forehead, we may commence *de novo*—at any rate, we may heal the wound we have made on the brow, and again attempt to attach to it the stump which still remains upon the arm. Again, it is preferable to the common Taliacotian operation, where, even if successful, the patient's face is deluged with the results of suppuration, as is not the case in that performed by Dieffenbach. Contrary to expectation, the stump did unite to the brow; in a few days all ligatures were removed; the patient bore the distressing position of her arm with the greatest fortitude, and could with difficulty be persuaded at the end of a fortnight to allow the base of the triangle to be cut away and the arm released from the face. The case was perfectly successful; and suffice it to say, that by transplantations, frequent and small incisions, and parings and graftings, and by the introduction of tubes and needles, and by compresses, a respectable nose was at length formed; by appropriate operations the ectropium of both eyes was relieved, the many and hard cicatrices were removed from the face; and at the end of eighteen months the patient was presented to the Klinik a very different being to what she was when last there; and she quitted Berlin with the consciousness that, by her steadfast and enduring perseverance, she had compelled the Professor to an operation he had deemed impossible, and even by the success of which he had been amply rewarded.]

**ART. 90.—Removal of a Portion of the Substance of the Brain for Cancer. Temporary Recovery.** By M. SANSON.

(From a Report of the Parisian Med. Society. *Med. Times*, March 13, 1847.)

In the year 1834 Mr. B. came to Paris for the purpose of undergoing an operation for a cancerous tumour of the orbit; the growth had acquired the size of the head of a fœtus. Pains in the limbs and some degree of previous paralysis, showing that the brain was in all probability implicated, induced Professor Sanson at first to set aside all idea of an operation. But, the patient having expressed his settled determination to destroy himself if the operation was not proceeded with without delay, M. Sanson consented to operate in the presence of several British practitioners, fellow-countrymen of the patient. A portion of the frontal, the nasal, and maxillary bones having been removed, the dura mater was found to be affected, and was likewise excised, but the cerebral substance itself was occupied by the disease; and after a short conference, in which Sanson alone persisted in the opinion that it was his duty to achieve the operation he had begun, one ounce and a half of cerebral substance was removed by a section which penetrated into the lateral ventricle. The cerebral vessels were cauterized with a heated probe, and the patient recovered completely from the effects of this tremendous operation—no paralysis, no disturbance whatever of the cerebral functions having been observed. Sixteen months after, the patient died in consequence of reproduction of the growth in the scar, and on dissection the disease was found to extend as far as the posterior cerebral lobe.



## PART III.

# MIDWIFERY, AND DISEASES OF WOMEN AND CHILDREN.

---

### SECT. I. MIDWIFERY AND DISEASES OF WOMEN.

ART. 91.—*Observations on Dysmenorrhœa.*

By Dr. OLDHAM, Lecturer on Midwifery at Guy's Hospital.

(*Medical Gazette*, Nov. 27, and Dec. 4, 1846.)

[Dr. Oldham considers that there are two forms of dysmenorrhœa, which admit of being well defined; one in which the os uteri is too narrow, and the flow of the menses consequently impeded; and another form which is distinguished by a membrane being cast off from the cavity of the womb. The former he calls mechanical dysmenorrhœa, the latter membranous dysmenorrhœa. He illustrates the first form by two cases which may be thus briefly mentioned.

CASE I.—A married woman, æt. 31, married two years, but never pregnant, consulted Dr. Oldham for painful and scanty menstruation, and more particularly for sterility, on account of which she had been reproached by her husband. On examination the uterus was found natural, with the exception of the os, which was extremely small and contracted. Dr. Oldham resolved in this case to dilate the os by means of Dr. Simpson's concealed bistoury, which was accomplished without pain and without bleeding. A small-sized sponge tent, coated with tallow, was then fixed in the part, and on the following day a common metallic bougie was passed and repeated at intervals of a week, the size being gradually increased. After this treatment she passed through a period with much less pain than usual, and eventually became pregnant.

CASE II. was a woman, æt. 32, complaining of scanty and painful menstruation. The pains were described as peculiarly severe during the period. After fruitless attempts to cure her by sedatives and attention to the general health, Dr. Oldham divided the os, as in the former case, but the relief was not so decided. Upon these cases the author remarks as follows:]

It will be seen, that in the first case the benefit of an artificial section was most marked. Immediate relief to the pain of menstruation, an increased flow, and a cure of the sterility followed upon it. In the second case, the dilatation afforded only partial relief. The first case proves that the operation recommended by Dr. Macintosh is legitimate and useful: and that by it we may, so to speak, release the functions of the womb from a restraint which is essentially morbid. Taking the two cases together, there is also another inference, that the simple presence of a small os uteri is not enough to warrant its performance. I believe that the main distinction in the two classes of cases is, that in the one there is a full development of the internal organs, with the exception of the morbidly small outlet of the womb; in the other, the whole sexual system is but imperfectly developed. [This is ascertained by measurement by Simpson's uterine sound, and by the weight of the organ as ascertained by the finger.]

There is a symptom common to the two cases which demands a word, viz: the scantiness of the flow. I believe Dr. Churchill to be right when he says that in dysmenorrhœa the discharge may be scanty, profuse, or in the ordinary quantity;

but it appears to me, that this fact implies another, namely, that there is a corresponding variation in the pathological states which accompany them. In the two cases related, there is to be found the explanation of the diminished flow, in the physical imperfection of the uterus itself. Cases of the second form ought to be classed with cases of amenorrhœa.

[The author concludes this portion of his communication with the following summary of his views:]

1. There is a form of difficult menstruation which depends upon a morbid contraction of the sexual passages, which may be either congenital or acquired, and affect either the os uteri internum or externum.

2. That the form of dysmenorrhœa is usually accompanied with a scanty flow of the menses and sterility.

3. That a great practical distinction is to be drawn between a womb which is altogether small, being imperfectly developed, and a womb which is well developed excepting in having a contracted orifice. The former cases are allied to amenorrhœa; the latter are essentially cases of impeded menstruation.

4. That in this latter class of cases, which in practice will be found to be *very rare*, a perfect cure may be obtained by mechanical dilatation of the cervix.

5. That division of the cervix and the passage of a metallic dilator, afford an easy expedient for this purpose.

[The second form of dysmenorrhœa is more common than that just mentioned, and has been well described by many writers on female diseases; but Dr. Oldham thinks a very material point in its history has generally been omitted, viz. the effect of its continuance in permanently enlarging and displacing the womb. The following case, which we shall abridge, exemplifies this variety of dysmenorrhœa:]

A female, æt. 31, last living child aged nine years, has since aborted several times at the fifth or sixth week; last miscarriage dates a twelve-month back; since this, has suffered from pain in the hips and back. When seen by Dr. Oldham, had a distressed countenance; complained of habitual pain at the sacrum running down to the anus; pain in the right inguinal canal; occasional dysuria, and other pelvic symptoms, much increased by walking. Pain on sitting down, copious thick discharge; pain in coition, so severe as to cause its being given up. Menstruation regular but excessively painful, accompanied by clots and shreds of membrane. On examination the vagina was found hot and bathed with discharge; the uterus had prolapsed to within two inches of the external parts; the os was patent and uneven, and somewhat tilted under the pubes, the fundus being at the same time correspondingly retroverted. By speculum the cervix showed a surface of vivid granulations.

The treatment consisted in scarifying the cervix, taking about two ounces of blood at a time; perfect rest, and the use of saline aperients and the following injection: decoct. papav. ℥vj; ext. conii, ℥j; lig. plumbi, ℥ij. This plan was followed by considerable relief.

[Subsequently to this period, the patient exhibited several specimens of dysmenorrhœal membrane, the passage of which was, as before, accompanied by severe pain. Being again placed under treatment, Dr. Oldham leeched the uterus once a week, and put her under a course of mercury, from which she has received considerable benefit. Dr. Oldham goes on to observe:]

This is a case which, in its general features, is very frequently met with in practice, and may be very well taken to illustrate the pathology, symptoms, and treatment of membranous dysmenorrhœa. It will be seen that painful menstrual periods, with copious, rather than scanty flow, the casting off of portions of membrane, and then an increase in size and weight of the womb, leading to its displacement are the principal signs to be noticed. Partial prolapse, inflammation, ulceration, and sterility may also be remarked.

The membrane which is thrown off in this disease varies in appearance, being sometimes a clear tubular cast of the uterine cavity. It is more frequently, however, consists of shreds the size of the finger-nail, or larger irregular pieces, the expulsion of which causes great suffering. Sometimes the menstrual blood coagulates round a portion of the membrane, and comes away as a hard compact clot. Very often the discharge consists of thin thread-like portions, at others, of half a cupful

of thick tufts resembling the villi of the chorion filled with blood. The latter variety of discharge has, I believe, been often mistaken for the so-called hydatid degeneration of the placenta; and I feel persuaded never occurs but when impregnation has preceded.

[Dr. Oldham's views as to the formation of the dysmenorrhœal membrane are thus expressed:]-

It is generally thought to be lymph, but if some good specimens are carefully examined, they will be found to possess the same structure as the decidua. Not only do they resemble this structure in having a rough, attached, and a smooth free surface, but, what is more significant of their identity is, they are full of little holes and epithelium-scales, which I do not doubt are the openings, and epithelium of the follicles of the uterine glands. It is very true, as Dr. Montgomery has noticed, that the small cotyledonous sacs are wanting, but this is often the case in true decidua thrown off in abortion. I doubt whether the swollen uterine glands bulge into sacs until the choreal villi are attached within them.

[The practical bearing of the above remarks is, that the membranous exudation of dysmenorrhœa, equally with the decidua, depends upon an action commencing in the ovary. In healthy menstruation, Dr. Oldham observes that the various stages, the congestion of the ovary, the engorgement of the womb, and the flux are in harmony; but if the sexual appetite is excited in whatever way, then the uterine glands enlarge by sympathy, and a new formation begins, which is cast off at the next monthly period. As a sequel to the membranous forms of dysmenorrhœa, Dr. Oldham mentions retroversion of the womb.]

I can bear testimony, he observes, to the truth of an observation of Dr. Rigby, that retroversion is one of the most common affections of the unimpregnated womb, and I would add that one of its common causes is the continuance of this membranous dysmenorrhœa. . . . The change occurs slowly, and takes several months to accomplish. The texture of the womb becomes altered. In a recent congestion the posterior wall is soft, compressible, and painful to the touch, but after repeated engorgements becomes harder, more solid, and very much like a fibrous growth.

I lay stress upon the swelling of the posterior wall, because it is more sensibly affected by congestion than the anterior wall. The natural convexity of this part becomes still more prominent, and when examined by the finger it often feels so round and solid, and swells out so abruptly from the cervix, that I am quite sure it is often mistaken for fibrous tumour. This swelling of the posterior wall forms a good practical distinction between a womb enlarged by congestion and one distended by early pregnancy. I have been in the habit of depending very much on the even enlargement of the anterior wall as a good diagnostic of early pregnancy.

The principal symptoms of the large and retroverted womb (incidental to this disease) are an additional weight in the lower part of the abdomen, and a painful sense of pressure about the sacrum; pain referred distinctly to the inguinal canals. There is pain also on sitting down, with a feeling as if some body were pressed upwards.

[In the treatment of this condition of things, Dr. Oldham deprecates attempts to redress the displaced womb by the metallic sound. He relies upon keeping the patient quiet, regulating the diet, and small doses of mercury so as slightly to affect the gums. Leeches are applied to the cervix once or twice a week. Scarification is stated to be only useful when the cervix is granular and bleeds readily. Blisters to the sacrum are also useful. The liquor potassæ arsenitis, given as directed by Mr. Hunt, on a full stomach, is a good auxiliary after mercurial action has been obtained. By this means many supposed cases of fibrous degeneration of the uterus have been cured. The conclusions to this paper are the following:]-

1. There is a form of menstruation rendered extremely painful from the production and casting off of a membrane from the cavity of the womb.

2. That this membrane is not the product of inflammation, or a thick mass of epithelium, but it is formed from the uterine glands, just as the decidua is, and is expelled in the same way.

3. That the morbid action does not begin at the uterus, but in the ovary, and the



sequence of effects is, first, ovarian congestion, calling forth a sympathetic growth of the uterine glands, forming a false decidua, and uterine engorgement.

4. That this uterine engorgement is oftentimes relieved by a profuse menstrual flux; but if not, the posterior wall of the womb gradually increases in size and becomes hard, the balance of the organ is lost, and it becomes retroverted.

5. That the swelling of the posterior wall and falling back of the womb form a differential diagnosis between congestion and early pregnancy, the anterior wall enlarging in the latter, and the body being directed forwards.

6. That the symptoms of retroverted womb from this cause are not often mechanical obstruction to the other viscera.

7. That the treatment consists in strict attention to general health, leeching, and mercury.

ART. 92.—*On the Treatment of Chlorosis.* By Sir HENRY MARSH, BART.

(*Dublin Quart. Journ. of Med. Science*, Nov. 1846.)

[The memoir from which the following extracts are taken, is occupied partly with the consideration of chlorosis and hemorrhage, in their positions of contrast as diseases, but chiefly with the investigation of the pathology, causes, and treatment of the former. Although the entire memoir is well worthy of perusal, we shall give only the author's opinions on certain points connected with treatment. Speaking of the various neuralgic affections to which chlorotic patients are subject, he says:]

Many individuals suffer from intense frontal headache, either constant or periodical, from acute pain in the sides, in the hypogastric regions, and sometimes in the extremities. In such cases the treatment must be complex; yet whilst the leading object, the amelioration of the blood, should never be lost sight of, the means best calculated to mitigate and remove the neuralgic complication must not be omitted. In some cases, where there is much spinal tenderness, it may be necessary to detract blood, either by cupping or leeches. Care, however, must be taken that the quantity of blood drawn be small; leeches should not be applied in too great number; nor a prolonged bleeding from the bites be encouraged. The operation of cupping has, in this respect, a great advantage, that there is no after-bleeding. I have seen chlorotic patients permanently injured by profuse local bleeding. In general, the repeated applications of small blisters on either side the spine, is the preferable mode of treatment. In many cases of spinal irritation, the pain is observed to be at the side rather than at the summit of the spinous processes. For the removal of neuralgia, opium should be sparingly given, as it may diminish the secretions, and by frustrating the nervous energy, injure the respiratory functions, and thus add to the existing imperfections of the blood. [Sir H. Marsh has occasionally found benefit from aconite and cannabis indica; but as all these agents lower the vital energies, he considers them as ill suited to a disease, the characteristic of which is to depress every vital function. . . . Lotions consisting of anodyne solutions upon lint, and covered with oil silk, are often valuable. The ointment of the sulphate of veratrine (2j to 3j) he has found particularly efficacious.]

On the mode of administering iron in chlorosis, the author's remarks are to the following effect:]

The mode of administering iron is not unimportant. There is none superior to that of drinking the natural waters at a chalybeate spa; because, in most cases, it involves the necessity of travelling, change of air, climate, and scenery. Of the distant spas, there is none better than the Langen-Schwalback, in Nassau. There is considerable difference in the effects of the different preparations of iron. The muriated tincture, for example, produces on the stomach, bowels, and kidneys, an action very different from that of the subcarbonate or the sulphate. The wine of iron, or this in combination with rhubarb, is very suitable to children. The citrate of iron and ammonia is valuable in those cases of chlorosis characterized by distressing coldness of the extremities. Mr. Bewley's effervescent chalybeate is also praised, and the following formula recommended: Water of the citrate of ammonia, 3iij; water, 3vj; syrup, 3j; citrate of iron and quinine, 1 to 3 grains—taken three times a day.

ART. 93.—*Chenopodium Olidum in Amenorrhœa, &c.* Mr. Houlton states that he has had frequent opportunities of watching the medicinal action of the chenopodium olidum, and is perfectly convinced that it is a very safe and important remedy, in many cases in which the catamenial function is not duly performed. He employs the spontaneously evaporated extract in the form of pills, from five to ten grains, night and morning. In general, if the pills are taken regularly for a fortnight previously to the expected return, the beneficial effect of the medicine is manifested: should this not be the case, he repeats them in the same manner, that is, for a fortnight previously to the expected change. He does not advise this medicine to be given in all cases in which the catamenial flux is suspended, for there are many cases in which attention to the general health will effect a cure, which it would be superfluous to detail. It is in those cases in which the uterus itself requires medicinal aid, that the peculiar benefit of the chenopodium is shown.

*Medical Times.*

ART. 94.—*Observations on Uterine Catarrh.* By Dr. EVORY KENNEDY.

(*Dublin Quarterly Journal*, Feb. 1847.)

[The following remarks, which we consider of sufficient importance to be placed under a separate article, form the concluding portion of a paper which we have elsewhere noticed. (See Art. 97.)]

In catarrh of the uterus, the disease commences with simple inflammation of the lining membrane of this organ, which may be confined to the cavity of the neck, or extend to the body. The inflammation may involve the submucous and glandular tissues, the latter of which occurrences is indicated by the secretion of a glairy, viscid, and tenacious discharge. The menses may be regular, or may be suspended; in the latter case, engorgement of the uterus is added to the list of symptoms. On examination, when the menses are regular, the os is usually patulous, the inner edge, red and granular, and there is seen a plug of viscid mucopurulent matter hanging into the vagina. This is removed with great difficulty, and the mucous membrane generally bleeds in consequence of attempts to dislodge it.

This disease is one of the commonest accompaniments of sterility, and is, according to Dr. Kennedy and others, not unfrequently its cause. It is accompanied by a peculiar distressed state of countenance, with a dirty tint of skin which is not readily mistaken. "In fact," says the author, "wherever the appearance of the skin just described, accompanied with an anxious expression, is found in a barren female whose uterine health is deranged—more especially, if she have red discharges from the uterus at irregular periods, with or without the glairy discharge, and accompanied by debility and lassitude—this disease should be suspected, and a careful inquiry into its existence instituted."

If this state be not checked, Dr. Kennedy states that it sometimes proceeds to an organic change, which he terms "uterine ramollissement," attended with frequent bloody, gummy, and mucopurulent discharges, and gradual hectic, under which the patient sinks.

The difficulty and risk which attend the use of applications to the interior of the uterus, render the treatment of the chronic affections of its lining membrane unsatisfactory. If the disease be limited to the cervix it is more under control, and is treated by the author by the local application of nitrate of silver or nitrate of mercury. If, as is sometimes the case, there is a contraction of the cervix, either original or consequent upon the first cauterizations, this must be overcome by graduated bougies. The application to the lining membrane of the uterus, is best made by passing the brush which holds the caustic solution through a catheter.

[Speaking of uterine injections, the danger of which we shall elsewhere mention. (See Report on Midwifery, the author states that he is able to obviate any ill effects by the following contrivance:)]—"By means of a long graduated glass syringe, a quantity of fluid not exceeding twenty minims may be thrown into the cavity of the uterus, and its escape thus secured. The syringe, attached accurately to a small male gum-elastic catheter, is fitted into a somewhat shorter catheter or tube, the difference in the calibre of the catheters being such that the outer catheter

ter admits of the regurgitation of the fluid between it and the smaller. The syringe and inner catheter are first charged with fluid, leaving the piston so far withdrawn as to allow merely twenty minims, in addition to the charging of the tube, within the cylinder of the syringe, as proved by the graduated mark on its side. The patient is now placed in the recumbent posture, the tube introduced, the inner is passed through, and the fluid slowly projected." By this means the author thinks that safety is ensured.

After the use of the nitrate of mercury for three or four times, at intervals of ten days, the author advises a change for a ten grain solution of the nitrate of silver, and again, after a certain interval, for solution of acetate of lead or nitrate of soda. In conjunction with this treatment, congestion is to be attacked by leeching, and counter-irritation by mustard plasters, or one consisting of Burgundy pitch and tartar emetic. Copaiba may also be exhibited. Tonics should be withheld at first, but are serviceable after the local treatment. Of these the best are the mineral acids, zinc, quinine, and iron. Benefit is also derived from Donovan's arsenical solution in some of the more obstinate cases.

The symptoms which indicate improvement are diminution of the size of the uterus, when engorgement had coincided with the catarrh; diminution and alteration in the characters of the secretion; return of a healthy tint to the skin, and cessation of the hemorrhagic discharges.

ART. 95.—*Treatment of Leucorrhœa by Uterine Injections.* By DR. MITCHELL.

(*Dublin Med. Press*, Feb. 17, 1847.)

For the purpose of more accurately stating the plan which he adopts in the treatment of uterine leucorrhœa, Dr. Mitchell calls attention to the composition of the lining membrane of the uterus. He observes that Heister, Morgagni, and Madame Boivin, compare it to the serous membrane which lines the vascular system: Cruveilhier admitted that it was mucous membrane during pregnancy only. It has been held by many anatomists, that mucous follicles are only to be found in the cervix, and that a totally different membrane is present in the fundus—in fact, that the uterus contains both mucous and serous membranes. Those who hold this view of the case maintain that in all cases of uterine leucorrhœa the source of the discharge is the cervix, and that all that is necessary to cure the disease is at once to obliterate the vesicles of Naboth; and M. Huguier goes so far as to propose that the cervix uteri should be freely divided with a long-bladed knife, in order that the surface may be more effectually cauterized. When we recollect that the fundus uteri is the chief source of the catamenia, we are at once inclined to think it impossible that the leucorrhœa which often supplies the place of the sanguineous flow, and generally precedes and follows it, can have any other source. Madame Boivin, speaking on this subject, says—"With regard to the cervix, it is well known that it has numerous follicles, and secretes a viscid and abundant mucus in its natural state; and that leucorrhœa is an accompanying symptom in many affections in which the cervix only is diseased: it may also be observed that lectiform whitish discharges per vaginam are very frequent in newborn infants, in whom the body of the uterus and the Fallopian tubes are very small, and the cervix uteri much developed, open, and generally filled with a copious viscons mucus." We are therefore, Dr. Mitchell thinks, warranted in coming to the conclusion, that there are two species of *uterine* leucorrhœa—one, in which the disease is situated in the cervix; and the other, in the fundus and body; and this view of the subject receives considerable support from the experiments of Weber, who has shown with the microscope the existence of follicles in the fundus uteri in the cow, and also in the human subject during the second month of utero-gestation; besides which, according to the statement of M. Chassaignac, the secretion in the fundus uteri is acid, whilst that of the cervix is alkaline. Here, then, we have, he thinks, sufficient data to go by, and he conceives, that if we have any means in our power of ascertaining with facility whether the source of the disease be from the cervix or fundus, one of the greatest objects in a practical point of view is effected, and this desideratum he is of opinion has been achieved.



The instrument used for this purpose by Dr. Mitchell is simply a gum-elastic catheter having its extremity free. The stilet which passes through it is furnished at the end with a protuberance, behind which a number of slight notches are made for the purpose of more firmly fastening a piece of litmus paper on it. The instrument being thus prepared, and the patient in a proper position, the speculum vaginæ is introduced, and the catheter passed for about an inch through the cervix uteri. The stilet is then gently protruded, and allowed to remain quiescent for a short time, to permit the paper to be moistened with the discharge in the cervix uteri; it is then withdrawn again into the catheter before the latter is removed from the cervix. The entire instrument is then withdrawn and the paper examined; if it come back of its original blue colour the disease is in the cervix; if, however, it be reddened, we have then evidence to prove that the source of the discharge is from the fundus uteri.

Having ascertained the seat of the disease, the after-treatment becomes very simple, in the event of it being found to be in the cervix. The catheter should again be introduced without the stilet, and having previously filled the gum-elastic bottle with any fluid which may have been selected, it may be attached to the catheter, and the fluid gently injected. The fluids that Dr. Mitchell uses are diluted sulphuric acid, in the proportion of half a drachm of acid to the ounce of water, and also a solution of acetate of lead,  $\mathfrak{zss}$  to  $\mathfrak{z}\text{i}$  of water. In some cases where there has been a difficulty of passing the instrument into the cervix, or where the inside of the lips of the os uteri have been abraded, giving rise to a slight oozing of blood, on the gentlest attempt to introduce the tube, he has contented himself with applying nitrate of silver to the surface, so as to heal the ulcer prior to passing the instrument. In like manner, where the mucous glands of the cervix are much enlarged, he prefers smearing the extremity of the tube with an ointment consisting of ten grains of nitrate of silver to a drachm of sperm ointment, having previously passed the instrument without any ointment on it, and wiped it clean from all adhering mucus—a precaution just as necessary as that required in ulceration of the os uteri, as the application would otherwise be prevented from exerting its full influence on the diseased surface.

[On the subject of uterine injections in general, see Report on Midwifery in the present volume.]

ART. 96.—*New Pelvimeter.* A correspondent of the "Medical Gazette" suggests the following simple contrivance for taking the dimensions of the pelvic outlets. It consists of two pieces of wood, each one-eighth of an inch square and eight inches long, fastened together in the centre by a pivot, so as to form a cross with equal legs. The lower extremity of one of these legs has a graduated transverse bar attached, upon which the other leg traverses. It is evident, from the construction of this instrument, that whatever space is ascertained by the expansion of the upper legs of this double compress, is marked by the separation of the lower. All that is required, therefore, is to introduce the upper end, closed with the fingers, and to open it when in the pelvic cavity.

*Medical Gazette, Oct. 30, 1846.*

ART. 97.—*Practical Observations on some Congestive, Inflammatory, and Ulcerative Affections of the Uterus.* By Dr. EVORY KENNEDY.

(*Dublin Quart. Journal, Feb. 1847.*)

[The object of the present communication is to give the result of the writer's practical acquaintance with the important sections of uterine diseases comprised in the title, and to render the reader familiar with their anatomical peculiarities, as well by verbal description as by a series of well-executed coloured engravings. The author commences with certain rules for the use of the speculum, an instrument which we regard as possessing an importance second only to the stethoscope. In a first examination, he recommends the four-bladed instrument; subsequently he prefers that invented by Dr. Fergusson, made of glass, and coated with caoutchouc.

When the os is malplaced, or difficult to catch in the field of the speculum, the

expanding instrument is considered the best. As to position, the author recommends the labour posture, the vulva being covered, for delicacy's sake, with a sheet, with a hole in it to admit the speculum. This we regard as a refinement which will seldom be required on the part of the patient, and which may be somewhat embarrassing to the practitioner. If the vagina be inflamed and tender, the author very properly advises that the speculum should not be used until those symptoms have been relieved. He condemns, in strong terms, the routine practice of ordering astringent injections for every form of vaginal discharge, without inquiring into its cause, and after giving certain useful directions as to the nature of the inquiries best calculated to elicit the necessary information, proceeds to the subject of congestion of the uterus.]

"The uterus, like the rectum, is liable to retardation of blood in the venous vessels and capillaries, giving rise to congestion, engorgement, and even varix. This congestion is generally more or less combined with infiltration into the cellular tissues of the neck and parenchyma, and sometimes with disease of the lining membrane. It contrasts with chronic inflammation by its darker colour, and by the occasional development of varicose veins. A vaginal examination in complete congestion displays a fulness and enlargement of the organ, much resembling early pregnancy. Partial congestion, however, gives us increased development of the neck only, or of the body, or a portion of it. These cases are often accompanied with displacement. ....

"Congestion may exist without any lesion of the uterus, or may be combined with excoriation, ulceration, or granulation of the neck or lining membrane. ....

"In addition to removing its cause, congestion of the uterus is best treated by unloading the vessels of the part engaged. From three to six leeches applied directly to the uterus, will do more than thrice the number externally. The vessels having been unloaded two or three times, or oftener if necessary, counter-irritation over the pelvis or sacrum must be had recourse to. .... A continuous stream of cold water may be thrown into the vagina, followed by the use of mild astringent lotions, or the application of an eight-grain solution of nitrate of silver, and occasional inunction with citrine ointment.

"The general treatment will consist in the exhibition of alteratives. Tonics should be exhibited with care, although not entirely prohibited; in fact, whilst we have seen the greatest mischief induced by the use of tonics in this affection, we should state that in *some cases* decided benefit has been derived from bark and iron."

[With this brief description of congestion, the author proceeds to the subject of inflammation of the uterus. He observes:]

"Inflammation of the uterus, when acute, is easily recognized by the seat of the pain and distress, combined with febrile excitement, and various sympathetic derangements. Partial chronic inflammation is not, however, so readily discovered, and it may, in the first instance at least, occur without constitutional disturbance. The symptoms are similar to those of congestion; but there is, in addition, pain more or less severe, increased on pressure, sexual intercourse, etc.

"The obvious treatment here is general and local depletion, antiphlogistic regimen, mercury and counter-irritation, the warm bath, soothing fomentations and injections, and the removal of every possible excitement."

[The diagnosis of the seat of the inflammatory action is established by the author upon the following data:]

"If fulness and marked pain, increased on pressure, exist in examining the uterine region, over the pubes, then the body of the organ is engaged; if the fulness and pain, increased on pressure, be perceptible only on a vaginal examination, it is confined to the os uteri, or the cervix; and if a discharge of mucopurulent fluid, with a tendency to the admixture of blood, be observed from the interior (of the uterus), the lining membrane is the seat of the inflammation. Should the discharge assume a very tenacious character, difficult to disengage from the interior, with a red and vascular appearance of the everted portion of the lining membrane of the lips, then the glandular structure within the neck is implicated. We do not always find the exact part of the organ so distinctly defined in practice, for the reason, that when one part takes on diseased action it commonly extends to the adjoining structures."

[The various forms of ulceration to which the os and cervix uteri are amenable, are divided by the author into three classes, the benign, the specific, and the malignant. The first class only is considered in the present essay.]

The simplest form in which the mild ulcer of the uterus shows itself may be termed *excoriation* or *erosion*, exactly resembling an abrasion of the cuticle in the male. It may commence in the same manner, or it may be the result of an aphthous inflammation, terminating in superficial ulceration. . . . These ulcers usually commence upon the prominent part of the lips of the uterus, whilst some spreading from the interior, extend to the os or vagina. These ulcers have been supposed, amongst other causes, to arise from the irritation of catarrhal discharge passing the lips of the uterus; but this opinion is satisfactorily controverted by Duparcque. It requires a practised touch to be able to recognise simple erosion by the finger, and even the most practised will be occasionally deceived. In the milder forms, it is merely the epithelium that is eroded, and in these the surface of the sore is so smooth and free from granular elevations, that the finger may pass over the ulcer without detecting it.

In this form there may be very little inflammatory or congestive alteration in the cervix. The existence of the ulcer may be placed beyond a doubt by washing it over with a ten-grain solution of the nitrate of silver, when its exact outline will be mapped in a dirty-white tint. Although this affection is often attended with little or no inconvenience, it is, in many cases, the cause of severe irritation. It is often cured by once touching the surface lightly with nitrate of silver, and using daily, for ten days, a mild astringent lotion, as one grain of the acetate of lead to the ounce of water.

The *granular* ulcer, like the one above described, may commence on the lip, or may extend from within it; in the latter case, it is frequently combined with the same state of disease in the mucous membrane of the uterus itself. The granulations in this are redder and more distinct than in the former variety, and are almost always combined with increased development of the lip or lips engaged, and often with symptoms of congestion or chronic enlargement of the part. This is also a simple and curable affection, requiring, however, a longer time to cure than the simple erosion. Its curability is much influenced by the accompanying inflammation, which must be treated on common principles before we attempt to heal the granulation. Whilst acute inflammation exists, there is little use in having recourse to caustics. The same observation also holds good with respect to chronic inflammation, and until it is somewhat ameliorated by depletion, we shall derive little benefit from caustics.

The caustic applications made to granular ulcerations, require to be repeated at intervals of seven or ten days for three or four times, using it more lightly on each succeeding application. In the interval between the cauterizations, mild astringent lotions should be daily injected. Counter-irritation, leeches, and alterative doses of mercury are also to be applied.

[There is a form of ulcer mentioned by the author under the term "cockscorn granulation," which appears to be an aggravated degree of the former. It generally engages the margin of the os, and consists of large sprouting granulations, divided into lobules by fissures of different depths. Of these the author remarks:]

The first few cases of this kind which we met with, caused much anxiety as to their curable nature; but the result of our observations is such as to satisfy us that they are as certainly (though more slowly) curable as the simplest granulation. The caustic requires to be more freely applied; if the solid nitrate of silver be used, it should be pressed steadily, for some time, against the sprouting granulations; if the nitrate of mercury be employed, then the brush must be repeatedly applied.

[Another variety of ulcer is described by the author under the term "bleeding ulcer," which is difficult of cure, but may nevertheless be induced to cicatrize by appropriate treatment. It is of a vivid red colour, with coarse granulations, and generally occupies both lips of the os. It bleeds on the slightest touch, and is attended with an irregular red discharge, appearing at intervals and after coitus. The treatment of this ulcer is chiefly by the application of caustic, which we are not to be deterred from using on account of the hemorrhage. This variety of ulcer is also liable to be associated with disease of the lining membrane of the



uterus, in which case the author recommends that the caustic be freely applied to the interior of the organ. The best caustic is the nitrate of mercury.

Having described the above varieties of uterine ulcer, the author next proceeds to lay down certain rules for the general treatment of the patient. As a rule, he advises abstinence from fermented drinks, as they have a tendency to keep up congestion and inflammation of the parts. Rest in the recumbent posture is also indispensable, as is abstinence of sexual intercourse, and other sources of excitement. Change of air is highly beneficial in all these cases; and this is the best associated when the patient's means admit of it, with a sojourn at some continental spa.

The author alludes to the occasional coexistence of these ulcerations with pregnancy, and agrees with Dr. Bennet (*Half-yearly Abstract*, Vol. IV, p. 147) on the propriety of attempting their cure pending the course of pregnancy, rather than losing time and risking the declension of the health by waiting for delivery.]

ART. 98.—*On Excision of the Cervix Uteri for Carcinomatous Diseases.*  
By Professor SIMPSON.

(*Dublin Quart. Journal of Med. Sciences*, Nov. 1846.)

The mode of operating, employed by Professor Simpson, is thus described. He fixes one or two vulsella into the outer or vaginal side of the cervix, as high as it is possible to insert them, and by the purchase thus afforded, he cautiously drags the part down on the axis of the pelvic brim, cavity, and outlet respectively, until it appears so far beyond the vulva as to allow the base of the cervix to be cut through. In some cases he has used a knife for this incision, but in consequence of the inequality in the cut thus made, he is induced as a general rule, to use the large blunt-pointed scissors, such as was used by Oseander and Dupuytren. He observes, that we are enabled to surround and embrace the whole cervix at once; and having cautiously adjusted their edges to the very points, which we wish to divide, and having thus calculated the exact limits of the incision, we may then immediately complete the amputation of the part, by one or two rapid strokes of the instrument. The blades must be placed around the cervix, above the line of the teeth of the vulsellum. The operation is facilitated by pressing the labia outwards with spatulae.

Dr. Simpson has always placed his patients upon the face, the body being across the bed, and the lower extremities hanging over as in the operation for hemorrhoids; we are thus enabled to make our incision through the cervix from behind forwards, a matter of no small moment, for if we cut from before backwards, we sometimes run the risk of opening the peritoneum, which descends lower behind than in front of the cervix, and offers a very thin wall of partition between the cavity of the vagina and the cavity of the peritoneum. Latterly, Dr. Simpson has found the first part of the operation facilitated by using a large strong vulsellum, made with the common loose joint of the obstetric forceps, instead of the usual scissors joint. With the common scissors-jointed vulsellum, whilst we are intent on fixing the teeth of one blade in a proper situation, the teeth of the other blade are apt to get entangled in the tumour or walls of the vagina, and thus embarrass the operation. But with the above modification this difficulty is avoided, and moreover we, according to Dr. Simpson, more readily effect what he believes to be the two principal secrets in the operation, viz:—1st, we fix both blades of the instrument, and more especially that corresponding to the diseased lip, as high upon the cervix, and as near its line of reflection upon the roof of the vagina as possible; and, 2d, by making our line of incision immediately above the hold of the vulsellum, we secure this important point, that the incision which we make is more likely, than if we followed any other plan, to pass through a stratum of healthy tissue, and we thus inevitably remove the whole vaginal portion of the cervix uteri, and the diseased structure of which it is the seat.

Several forms of danger are described by some authors as attending upon excision of the cervix uteri, and among others, severe nervous depression. Dr. Simpson has seen no instance of this. Severe hemorrhage is more rare than might *a priori* have been expected; in one case only Dr. Simpson found it of considerable amount, and it was then readily restrained by the plug. Of nineteen cases, operated upon by Lisfranc, four are said to have died within twenty-four

hours. Of eight cases operated upon by Dr. Simpson, seven recovered perfectly; the death of the eighth appeared to depend upon accidental circumstances. [The average number of deaths appears to be one in seven.]

*Cases adapted for the operation.*—The forms of disease in which it is justifiable to avail ourselves of this operation are, in the author's opinion, principally—

1st. Great morbid hypertrophy by elongation of the vaginal portion of the cervix.  
2d. Corroding ulcer, when limited to the lips of the cervix, and pathologically identical with the well-known malignant ulcer of the face.

3d. Circumscribed and local forms of carcinomatous disease, of the lips and lower segment of the cervix.

[Of these the most important is that in which there exists local carcinoma of the cervix uteri, as it is one which the female dreads with particular horror, and is, moreover, liable to be confounded with other affections of the same part. Thus, Dr. Simpson has seen a polypus regarded as irremediable cancer; he has also seen the same mistake made respecting retroversion, and still more frequently with ordinary inflammatory induration. Dr. Simpson asks the question, "supposing it is discovered by proper examination that the case is true carcinoma, is it to be looked upon as utterly hopeless?" To this he replies:]

"I believe in forty-nine cases out of fifty, in which we find the uterus or any part of it the seat of true carcinomatous deposit, the disease leads sooner or later to a fatal termination. The rapidity of its march is various, and may deceive an incautious observer by its duration. But though fatal in almost every instance, there are still some rare varieties of carcinoma uteri that are apparently within the range of surgical treatment; and one condition favouring this is, the generally admitted fact, that the disease almost always begins in, and for a time is limited to the structure of the lips and cervix of the uterus. Rokitansky, in speaking of the first locality and origin of cancer of the uterus, observes, "carcinomatous disease generally limits itself to the vaginal portion and cervix in a defined and later manner." And in another paragraph he remarks, "the primitive seat of cancer is always the cervix uteri, and first of all the vaginal portion. The primary appearance of cancer in the fundus uteri is limited to such extremely rare cases, that what we have just said remains a fixed rule."

In relation to the same question we must bear in mind another circumstance in the natural history of carcinoma uteri. "Uterine cancer," observes Professor Walshe, is "commonly primary" and possessed of comparatively slight tendency to contaminate the system generally.—In two important respects, therefore, uterine carcinoma present conditions favourable for surgical interference; still, however, in order that a case may offer any chance of success, several conditions seem requisite:

1. The disease must be in an early stage.
2. The morbid structure must be strictly limited to the lips or cervix, or, at all events, be *distinctly* situated below the line of reflection of the vagina upon the cervix uteri.

In actual practice, however, it seldom happens that the above combination of circumstances is met with, because the medical attendant is rarely consulted until the disease has passed the limits in question.

3. Future inquiry will in all probability prove that there are some varieties, types, or species of carcinoma of the cervix, which are much more within the pale of surgical treatment than others. This I believe to be a most important subject of inquiry.

ART. 99.—*On Inversion of the Uterus.* By JOHN GREEN CROSSE, Esq., Senior Surgeon to the Norfolk and Norwich Hospital.

(Continued from Vol. IV., p. 152.)

[We proceed, according to promise, to lay before our readers a continuation of our abstract of the above important essay. As, however, the great length and laborious minuteness with which the author has treated the present division of his subject precludes the possibility of giving a complete analysis of its contents, we are compelled to reproduce such portions only as are of direct practical importance; but we must not omit to state that the necessity of economising space alone



could cause us to pass over matter of such interest as that contained in Section 7, "On the Infrequency of Inversion of the Womb," and Section 8, "Autopsical Illustration of Inversions of the Womb."]

*On the Symptoms and Pathological Effects of Inversion of the Womb.*—The symptoms of uterine inversion are either local or general, and require to be considered in reference to the degree and duration of the malady.

Simple *depressio* (vide vol. iv. p. 152), viewed as occurring after the child and placenta are delivered, may be indicated by hemorrhage and prostration alone. The depression may be discovered through the abdominal parietes, especially if the fundus be the part affected. By internal examination the depression is indicated by the existence in the uterine cavity of a soft and regularly convex prominence. Whenever any doubt exists as to the cause of post-partem hemorrhage, Mr. Crosse advises that this examination be invariably practised.

As the displacement progresses and becomes *introversio*, the symptoms are aggravated in proportion to the pressure exercised upon the *inverted* portion of the organ. The patient complains of a weight and uneasiness of the vagina, and involuntary expulsive efforts are made by the abdominal muscles. The presence or absence of hemorrhage depends upon the state of the organ as to tone and compression. The system affords evidence of "shock." After a few hours there may be retention of urine. The tangible evidence consists in a soft substance being felt within the os *tinæ*, as if there were another placenta.

When the displacement has progressed to the stage of *perversio*, and the inverted portion has passed through the os *tinæ*, the symptoms are greatly aggravated, particularly those depending on the nervous system; there are clammy perspirations, cold extremities, vomiting and restlessness; pulse scarcely perceptible, pains in the loins and pelvis, &c. The hemorrhage in this stage varies according to the degree of constriction exercised upon the inverted portion by the cervix, and the contracted or relaxed state of the inverted portion itself. If the cervix constrict moderately it promotes the hemorrhage; if powerfully, it may entirely suppress it; but the nervous symptoms will become more urgent. This is, however, observes the author, the worst picture. If the cervix be relaxed, and the inverted part of the organ contracted, all the symptoms, including the hemorrhage, will be milder; and retention of urine may be the symptom which first awakens attention to the nature of the case.

The vagina is now filled by the inverted body of the uterus, which is either soft or tense and firm. The finger finds the tumour encircled by a ring, which is the cervix uteri; and if this be relaxed the finger can be passed sufficiently far to reach the angle formed by the reflection of the uterus. If the vagina be so closely filled by the inverted organ as to prevent the above examination, reliance for further evidence must be placed on an examination above the pubis, when a hollow may be felt at the upper part of the uterus. The surface of the tumour is not very sensible, unless inflammatory action have been excited, or the circulation in the part be considerably impeded by the constriction of the cervix.

If the inversion be total, so that no constriction is exercised by the cervix, and if the uterus be still contained within the labia, the symptoms are milder, the hemorrhage is little or none, and on tracing the tumour to its greatest depth, only a circular ridge or thickening, without any everted edge or lip, is perceived above the ridge; the vagina ends in a *cul-de-sac*, but the point can seldom be reached with the finger, unless the uterus is prolapsed as well as inverted, which is not always the case. On the contrary, as is mentioned by the author, in total inversion without prolapse, the inverted organ may mount so high in the abdomen as to rise above the pubis, or even near to the umbilicus. The severity of the symptoms is not in direct proportion to the degree of the inversion, for total may be accompanied by less urgent symptoms than partial inversion. If the patient survive, sooner or later, under the feeling, often deceptive, that the rectum or bladder requires to be evacuated, expulsive efforts are made, and the inverted organ is thrust out from the vagina, and depends externally as a vascular, florid mass, somewhat pear-shaped, imperforate below, and marked by an irregular and jagged surface, where the placenta had once adhered. This prolapse is the worse the more rapidly it is effected, and the earlier it happens after delivery.

[The above description refers to inversion as it occurs after detachment of the



placenta. The author next alludes to its occurrence before that event has taken place.]

Under these circumstances, the placenta being pressed on and supported by the inverted fundus, gives the idea of being larger and firmer than usual. When the funis is pulled, the accoucheur at the same time feeling above the pubis, he detects the depression, and finds that it deepens according to the traction exerted. Sometimes the placenta, with the inverted fundus, is thrust out of the external labia by a single effort; at others, advancing more slowly under expulsive efforts, it at length prolapses externally, presenting a uniform enormous mass, most puzzling to the accoucheur. The union of the placenta to the uterus is often so firm as to be considered preternatural, but Mr. Crosse thinks that it is often thought to be morbidly adherent when it is not so. When the placenta is removed, the inverted organ is seen to be of a soft and spongy texture, without much sensibility. When contraction sets in it becomes pyriform; previous to that its shape is irregular, flattened anteriorly and posteriorly.

[If the patient has been able to go through the dangers immediately attendant upon inversion of the uterus, the symptoms abate. The organ gradually contracts to near its natural size; a mucous loss is, however, generally present, and the menstrual periods are attended with hemorrhage.]

On examination at this time, the tumour on the vagina, the size of a small pear, is flattened both anteriorly and posteriorly, and about two inches long, smooth, bleeding easily to the touch, surrounded at its neck by a circular band, within which the finger or other instrument can be passed, detecting a circular *cul-de-sac*, less than half an inch deep all round. Examination by the rectum affords further evidence of the size and limits of the tumour, and the finger finds no solid resisting body, but ascertains the absence of the uterus.

If the patient lives, sooner or later, unless due precautions are used, the inverted organ prolapses externally, and often descends between the limbs, suspended by the inverted vagina. In this state the contents of the bladder and rectum become a source of irritation: chronic inflammation, with thickening and induration of the parts ensue, with ulceration, &c.; until, at length, the organ becomes so enlarged as to be irreducible into the vagina.

[The author now recapitulates the most prominent symptoms and complications of uterine inversion, speaking in turn of the mucous discharges, the hemorrhage, and the pain. The hemorrhage, he states, may proceed from three sources, viz., the detached surface of a partially adherent placenta, the uterine surface from which it has been detached, and the general mucous surface of the uterus. In reference to the pain and other nervous symptoms, the author takes into consideration the possibility of the intestines becoming incarcerated within the *cul-de-sac* formed by the inversion; but while he admits the possibility of the accident, he regards its rarity so great as to deserve to have but small importance attached to it in a practical point of view. Among the complications connected with the subject, inflammation of the displaced organ and its appendages holds a prominent place. Of this the author observes:]

When the textures composing the inverted part become actually inflamed, it is accompanied by increased heat, excessive sensibility to the slightest touch, and increase of size. Ulceration of the surface, or abscess within its texture, or adhesion of the opposed surfaces may ensue, but this last result is of rare occurrence. Excepting the cases given by Lisfranc, the author has not found a description of it, neither has he met with it in his own practice. Sloughing and gangrene are, according to the author, more common events; and he states that we have authentic instances where all the inverted uterus below the cervix, which has produced the accident by constriction, has been cast off, and the event followed by recovery. But constriction is not the only way in which this destructive change may arise; sloughing is often brought on by inflammation, aided by the predisposing conditions of the inverted organ. Here the process begins at the fundus, and extends upwards.

[Of this latter form of gangrene the author inserts two remarkable examples, which are illustrated by accurate engravings. For these we must refer to the original. Speaking of the consequences of chronic inversion, the author says:]

I find no reason to believe that malignant ulceration frequently attacks the in-

verted uterus, but rather that this morbid action, so peculiarly liable to attack the os and cervix when normally placed, is unlikely to occur under inversion, where the os and cervix are protected from various sources of irritation; and the fundus, from its different structure, is undoubtedly less disposed to cancerous induration, and ulcer as distinguished from induration that is mild and not cancerous.

*On the Causes and Mechanism of Inversion of the Uterus.* It will be convenient to consider the causes of inversion of the womb as predisposing and efficient.

The predisposing causes may exist long before the occurrence, but some one or more of them must be present at the time the displacement occurs. Whatever tends to relax the system might be enumerated among the predisposing causes; for a great majority of instances of this displacement have occurred in women of delicate frame, with yielding soft parts, such as contribute to a rapid delivery. A wide and straight pelvis is also a predisposing cause: as is likewise delivery in the sitting posture, as is practised in many foreign countries. Many of the recorded instances have happened to women rapidly and spontaneously delivered, before they had sufficient warning to assume the recumbent posture.

The condition of the organ itself is the next predisposing cause considered. Pregnancy is the only natural source of such a distension as fits it for inversion; and the full term is the most favorable period for the accident. It may, however, take place as early as an abortion at five months, as exemplified in a case reported by Mr. Skae (see Abstract, Vol. III, p. 132). The liability to inversion does not seem to be in direct proportion to its distension, as it is not more common in pregnancy with twins than in single births. Out of four hundred cases of inversion the author finds only four instances of twin deliveries. Again, inversion is more common in first than in subsequent pregnancies—a fact which likewise supports the author's opinion.

The condition of the uterine walls is next noticed. Partial inertia, or want of contraction and due vital action in a part of the uterus, has been generally regarded as a most powerfully predisposing cause; and the author states that he is unable to come to any other conclusion on the subject than that such a state ought in general to be regarded as a necessary condition for the first step in the displacement, *depressio*.

Since inversion cannot commence until the contents of the uterus escape, the dilatation of the os and cervix must be an essential preliminary, and the displacement will, of course, be facilitated in proportion to the degree of dilatation. Inversion is not materially encouraged by the previous occurrence of the same accident. Indeed the author has met with but few instances in which it has happened a second time.

The attachment of the placenta to some portion of the *fundus uteri* is found to be so general that it may be regarded as almost essential to the production of inversion. It undoubtedly ranks among the most powerful of the predisposing causes, and forms so close a link between them and the determining causes, that much which needs to be remarked about it may come under the latter category.

The efficient causes are classed under three heads—1st, such as are situated in the uterine tissue itself; 2d, such as act upon the outer surface of the organ; 3d, such as act on its inner surface.

The action of the uterus itself in increasing an inversion when once commenced, is regarded by the author as sufficiently evident, but he does not believe that an inversion can *originate* in uterine action alone.

Among the second class the expulsive action of the abdominal muscles is chiefly to be noticed; and this is indeed the main cause in some of the worst cases. All sudden efforts in which the diaphragm and abdominal muscles are opponents, sneezing, coughing, &c., may not only assist in the commencement of inversion, but are still more efficient in advancing the displacement.

The efficient causes of the third class are not numerous. The principal of these is the attachment of the placenta to the fundus and imprudent traction of the cord. In some cases, where the constitution is relaxed and the predisposing causes numerous, the slightest traction, even such as the experienced accoucheur might use, will prove sufficient to commence the inversion, which may then be hurried on by uterine action and abdominal efforts. The weight of the placenta alone is considered by the author not to be altogether inefficient as a cause; and it un-

doubtedly (when still attached to the depressed fundus) tends to aggravate the displacement by acting, by its pressure on the upper part of the vagina, as an excitant of uterine action, which, as the author has before stated, may increase an inversion after it has once commenced.

Inversion may also occur from causes located in the funis, when that cord is too short, either absolutely or through being twisted round the neck or body of the fœtus. In such instances the descent of the child is sometimes followed by the depression of the fundus.

The rapid delivery of the fœtus may also induce or add to an inversion; after the head is born, and whilst the uterus is quiescent, the injudicious attempt to withdraw the body will, upon the principle of a tendency to a vacuum, draw down the relaxed fundus and induce depression. This cause, will, however, be aided by the expulsive action of the abdominal muscles. Adhesion of the placenta to the fundus is an additional temptation to the exercise of traction, and may thus be the cause of inversion.

[In speaking of what is termed *spontaneous* inversion of the uterus, the author takes occasion to repeat that he does not believe that uterine action can originate the displacement, though it undoubtedly may increase it; he allows, however, that *spontaneous* inversion as opposed to that induced by violence or want of caution may occur, and in a foot note, cites instances in corroboration of his opinion. The author concludes this portion of his essay by the following account of inversion caused by polypus.]

Polypus rarely gives rise to the displacement, unless it is attached at or near the fundus. As the polypus grows, it necessarily distends and enlarges the uterine cavity; it also weakens the walls of the uterus by constant irritation and attendant menorrhagia. So long as the polypus is retained in the uterus no inversion takes place; increasing in size the polypus excites the uterus more and more to expulsive efforts, and until the os and cervix dilate, and the polypus projects beyond these, not even *depressio* is induced. When the mass projects at the os uteri, if the remainder towards its pedicle be conical, the contraction of the uterus upon it will aid its descent; and the same effect is produced by the sphincter vaginæ when its bulk has passed externally. A difference of opinion exists as to the mechanical effect of the weight of the polypus; but the author sides with those who look upon this as a very potent cause.

[In our next Volume we shall give an abstract of the section on the diagnosis of inversion of the womb, which want of space now compels us to omit.]

*Trans. of Prov. Association, Vol. iii.*

ART. 100.—*The Treatment of Uterine Tumours.* By THOMAS SAFFORD LEE, M. R. C. S.

(*On Tumours of the Uterus, &c., p. 24.*)

In the great majority of cases, these growths do not require any particular medical treatment; they frequently remain in a quiescent state for years; and we have mentioned one where the patient died when she was ninety-one, and had suffered, more or less, from a fibrous tumour thirty-one years. But this favourable result is not always to be anticipated; a blow, venereal excitement, and the effects of labour, produce such changes in the uterine tissue, as to induce inflammation and its consequences; and it is under these circumstances that we are called upon to treat the disease.

Some imagine and have stated, that fibrous tumours cannot be reduced, and that nothing but palliative treatment ought to be tried. But, however, Sir C. Clarke states, that he has seen a tumour of the uterus become absorbed; and Dr. Ashwell gives another case where it entirely disappeared. Again, it may be cured by expulsion; although this process is usually very hazardous to the patient, many survive.

When this disease comes under our notice, it is usually on account of some inflammatory process set up around the morbid growth: and I have invariably found that the judicious use of antiphlogistic are the most speedy means of giving relief.

Local depletion, by the aid of leeches, is the best method of treatment; but



these must be applied to the tumour itself. In a robust patient, of bloated habit, with great pain in the tumour, and with the signs of local congestion, as piles, the application of six leeches twice a week to the neck or body of the womb will not be at all too much; but if the patient is anemic, one application weekly is sufficient. The introduction of leeches to the tumour itself is of great importance. I have seen relays of them applied to the perineum, rectum, and groins be of little use, while one depletion from the tumour itself has been of the utmost service. A hip-bath, after the leeches come away, is very beneficial; it encourages the bleeding and relaxes the parts, and by these means removes the excessive pain which is usually present.

During the intervals of the leechings, mercury or iodine should be applied to the womb itself, either in its pure state, or made more consistent with wax. The ointment used at the Red Lion Hospital for women, is mixed with one part ung. hyd. fort., one part of cera lava, and one part of lard. This is rolled up in the form of a ball, and introduced into the vagina every night, as high up as possible, in order that it may envelop the os and cervix of the uterus; this remains for twenty-four hours, when it has generally disappeared: it may then be repeated.

I can strongly recommend this plan of local depletion with the application of mercurial ointment; of course it requires judgment to adapt it to the various cases which come under notice, but in all cases where it is judiciously applied it improves the patient.

The symptoms which arise after the application of this plan, and those which show the benefits derived from it, are, that the cervix uteri becomes much more distinct and developed: so that whereas before we could only, by careful examination, distinguish the os uteri, now the cervix bulges below the tumour; and, as before, the cervix had been pushed towards the pubis, so as hardly to be felt, now it gradually descends into the cavity of the pelvis, and perhaps occupies the centre. Another good indication that the tumour is less is, that it often rises above the pelvis into the abdominal cavity, so that, as before, you had a hard fixed mass pressing on all the organs of the pelvis, now they become relieved, and the tumour gives but little trouble.

Dr. Rigby has carried this plan still further; not only does he envelop the os and cervix uteri with the strong mercury ointment, but he dissolves the ointment, and after having drawn it up into a catheter, injects it into the cavity of the womb. He tells me that this is a great additional advantage, and that he has some cases under his care where, in one case in particular, the tumour, which formerly was one large, hard, solid mass, is now separating into distinct parts and becoming gradually less.

Constipation is almost a constant accompaniment of this disease, and the mildest cathartics should be used to obviate it. A good form is that of combining a tonic with a cathartic—as the equal parts of the infusion of gentian and senna—two or three times a day, as the case may require; and if the appetite is failing, a few drops of the nitric acid dil. is a good addition.

Mercury given by the mouth was once prescribed, but is now almost discarded in the treatment of this disease: it appears to injure the health, produces great weakness, and depresses the spirits of the patient. I have never seen any bad effects from its actual application to the womb; it has never affected the mouth, although large quantities have been applied, nor has it produced that languor and depression peculiar to the remedy.

Iodine, given internally and by inunction, has been greatly praised as a remedy in these cases, and more particularly brought into practice by Dr. Ashwell. This is to be given when the inflammatory symptoms have subsided, in the form of ten drops of the tincture of iodine in a glass of water, three times a day; to be gradually increased to as much as the patient can bear. The unguentum iodini may be rubbed upon and over the tumour night and morning. During the administration of this medicine, great care is necessary in preventing it acting injudiciously upon the system; if sickness arises, or emaciation take place, with headache and a sense of sinking, it ought to be suspended for some time.

This remedy has the power of stopping the increase of these bodies; it has been greatly lauded by Dr. Ashwell, and he has published many cases of its efficacy in *Guy's Hospital Reports*; but I have not at present seen those decided re-

sults I had expected from it. I am now treating a patient who has taken ten drops of the tincture of iodine three times a day for the last six months, (occasionally suspending its use for a time,) and has also rubbed in the ointment to the groins, and had it applied internally; and I find that though the tumours have not increased, but rather diminished, the functions of the bladder are much less interferred with than they were, so that she has given up the use of the catheter, and expresses herself lighter and much better; nevertheless, the tumours are still there.

The action of iodine is more marked where there is tumefaction and hardness in the neck of the womb. In one case of this kind I was very successful, the patient being entirely cured.

Dr. Walshe has confirmed the testimony of Dr. Ashwell as to the efficacy of this remedy; but Dr. Lever has not seen the benefit arise from its use that has been described. He says, "As far as my experience has gone in the treatment of this disease, I have never found the full and free exhibition of iodine followed by the absorption of the hard fibrous tumour, when I was convinced that such was the disease under which the patient laboured. I have, it is true, seen a stop given to the growth of the tumour after the exhibition of this remedy, although previously its increase might have been rapid." We are all aware of the difficulty of treating these tumours; and if iodine only tends to put a stop to their growth, it is well worthy of trial, as it prevents the more serious effects of pressure from the tumour, and it prolongs life with a greater degree of comfort.

Chloride of lime has been proposed as a remedy, but I have not seen it prescribed sufficiently frequent to come to any result conclusive as to its effects.

It has been a question lately mooted, whether it would not be justifiable to irritate the tumour in order to cause its expulsion? and if this object fails, it is supposed that the irritation produced will cause ossific degeneration. The former is a dangerous experiment; for although many recover after such expulsion, the period of the process is one of great danger to the patient. If the latter object would be obtained, it would be the most useful: when a tumour takes on bony degeneration, it always becomes much less in size, and consequently relieves those symptoms arising from its bulk.

When these tumours are attached to the neck of the womb or project into its cavity, it has been proposed by Lisfranc to enucleate them. This is done by freely dividing the mucous membrane that covers them, and with the fingers or scalpel separating them from their attachments. Whatever treatment be pursued, the general health must be sustained by air, exercise, and good food. Constipation and retention of urine must be obviated, and all sexual excitement, and especially the risk of pregnancy, avoided.

ART. 101.—*A New and Easy Method of applying a Ligature to the Uterine Polypi.*  
By W. S. OKE, M. D., Southampton.

(*Prov. Med. and Surg. Journal*, Dec. 2, 1846.)

[As it is generally admitted that ligature is the safest method of removing polypos growths from the uterus, the remarks of Dr. Oke, which are made with the object of facilitating the operation, frequently a troublesome one, will be considered as worthy of acceptance. After describing the instruments in most common use, as the double canula, Levret's instrument, and those of Nissen, Sir Charles Clarke, and Dr. Gooch, he proposes the following modification:]

The instruments are to consist of three metal tubes, two of which are to be of the length, shape, and size of a No. 8 male catheter, except that their sides are to be flattened, and that there be no rings at their lower ends. The curved extremities are to be rounded, each having an orifice in the centre, with smooth edges, and large enough to admit a strong ligature. The third is a stouter tube of the same diameter, eight inches in length, and straight to within an inch of its upper end, which is to be slightly bent and bulbed. A short transverse bar is to cross its lower end, at about an inch from the extremity.

*Position of the Patient.* Nothing conduces more to the facile use of instruments than a proper position of the patient. She is to be placed on her left side upon a mattress, with her trunk lying transversely across the long diameter of the bed-

stead, and her ischia upon its edge; the femora are to be well flexed, and the knees half bent and kept separate by a pad or small pillow.

*Mode of Application.* The two curved canulæ, containing a well-oiled ligature, and, exactly fitted together at their flat sides, are to be introduced into the vagina, with the concave surface to the pubes, their curved ends being directed to the anterior part of the stem of the polypus by the forefinger of the left hand. An assistant takes charge of the left tube, and the ligature being reflected and held between his finger and the canula, he keeps the instrument fixed in its position by pressing it steadily against the arch of the pubes. The right canula, with the ligature lying loose in the tube, is carried round the stem of the polypus, and brought again into position under the arch of the pubes at the *left* side of its fellow. The canulæ are now to be cautiously withdrawn, by depressing their handles towards the abdomen, and as their points are quitting the vagina, the ligature is to be caught between the finger and thumb, and held tense till the canulæ are completely clear of it; it is then, by means of a hooked wire, to be drawn through the third tube at its bulb end, which it guides to the root of the polypus. Having ascertained that no part of the os uteri is included within the noose, and the bulb of the tube being turned to the polypus, the ligature is tightened and secured upon the cross at the foot of the instrument.

The advantages of this method of tying uterine polypi are:—First, that it establishes a fixed point for the ligature, close to the os uteri, and which was scarcely attainable by any former method on account of the unsteadiness and mucosity of the surface of the polypus. Second, the length and curve of the canulæ, by which the ligature can readily be slipped round the root of the polypus by the second canula, from the fixed point established by the first. Third, the curves of the canulæ taking the course of the pelvic outlet, gives a freedom to the operation, of which, by the means hitherto employed, it has been comparatively deprived. And, lastly, there is also an advantage in the bend and bulb of the third tube; the former allows a direct action to the ligature, the latter prevents in great measure, all danger of the uterus or vagina being injured by any incautious movement of the patient.

ART. 102.—*On Inflammatory Ulceration of the Uterine Neck during Pregnancy.* [Dr. Bennet having terminated the series of interesting papers on this affection, one of which was noticed by us in our last volume, appends the following general conclusions:]

Inflammatory ulceration of the uterine neck is not an uncommon disease in the gravid uterus, although hitherto entirely overlooked by uterine pathologists and by accoucheurs.

When this disease exists in the pregnant state, its symptoms are the same as in the non-pregnant condition, but obscured, and more or less modified, by the pregnancy.

It is a frequent cause of disordered health during pregnancy, or of "laborious pregnancy." It is also one of the most frequent causes of abortion, both in the early and in the later months of pregnancy. It may occasion abortion, either directly, by reflex action; or indirectly, by giving rise to diseases of the ovum or placenta, or to uterine hemorrhage.

The instrumental examination of females labouring under inflammatory ulceration of the cervix during pregnancy is unattended with any risk, either to the mother or to the fetus; and it is absolutely necessary, in order not only fully to recognize the disease, but also to treat it.

The treatment of these forms of uterine inflammation must be governed by nearly the same rules in the pregnant state as in the non-pregnant state. A properly conducted treatment is nearly always successful in preserving the life of the child, and the integrity of the pregnancy, as well as in curing the inflammatory and ulcerative disease. It is also the only means we possess of warding off the imminent danger of abortion to which the patient is exposed.

This form of uterine inflammation being, generally speaking, the cause of those repeated and successive miscarriages which prevent females giving birth to a living child, it is only by curing it that we can hope to make them bear the product of conception to its full period.



The serious inflammatory and hemorrhagic symptoms which sometimes follow abortions are generally occasioned by unrecognized inflammatory ulceration of the uterine neck. On investigation it often becomes evident that this disease existed previous to the abortion, and occasioned it. The same remark may apply to some cases in which the above-mentioned symptoms precede and follow labour at the full time, as ulcerative inflammation of the cervix in the pregnant state is by no means necessarily followed by abortion.

Although inflammatory ulceration of the cervix seems generally to be a cause of sterility, yet, as will appear from the above essay, there are frequent exceptions to the rule. In some females, the tendency to become impregnated is so great, that no amount of uterine disease appears to prevent conception taking place.

*Lancet*, Dec. 12, 1846.

ART. 103.—*Salivation from the Cauterization of the Cervix Uteri with Acid Nitrate of Mercury.* M. Lisfranc has observed that the application of this form of mercury will produce salivation in about one case in two hundred; but the symptoms are not in general severe. In one case, however, a female in the ward of St. Augustin, in the Hospital of La Pitié, a single cauterization produced an abundant and obstinate pyalism. [This fact is worthy of being remembered, not only as contradictory of the opinion generally entertained of the comparatively low vitality of the cervix uteri, but as a caution which should not be without value, in reference to the mode of treating uterine engorgements now much in vogue.]

*Gaz. des Hôpitaux*, 17 Oct., 1846; *Prov. Med. Jour.*, Jan. 30, 1847.

ART. 104.—*Treatment of Placenta Prævia.* In commenting upon a fatal case of hemorrhage from placenta prævia, in which some indecision appears to have been exhibited as to the treatment, Dr. Radford thus briefly states his views of the course to be adopted under the various circumstances of the case:—

When the vital powers are thus depressed, we ought not to have recourse to any operation by which they are further lowered. Under these circumstances, then, delivery ought not to be had recourse to; first, because there is invariably an increased exhaustion produced by the excitement arising from the efforts of the practitioner, which are made to dilate the os and cervix uteri, and to extract the child; secondly, because an increased loss of blood inevitably takes place in cases of placenta prævia, during the operation; and thirdly, because syncope, or a tendency to it, is induced, by suddenly emptying the uterus.

Although I have the greatest confidence in the use of the plug, at an early period, in cases of placenta prævia, when delivery cannot and ought not to be performed, in order to save blood during the time which elapses whilst the preparatory changes take place in the os and cervix uteri, so that this operation can then be safely undertaken, it cannot be denied that it becomes a dangerous expedient in cases of extreme exhaustion, so long as the placenta is only partially separated from the os or cervix uteri.

The *secale cornutum* is totally inapplicable to cases of flooding where the energies of the woman are so low, because it tends further to depress the nervous system.

The complete detachment of the placenta is a practice which I have already advocated in such cases as the one under consideration; and if this plan had been trusted to, without proceeding to the extraction of the child, there is no doubt in my mind that a better chance to rally would have been given to the patient. What could be the object of first completely detaching the placenta, and then delivering the child? The complete detachment of the placenta has been recommended by me, to supersede the necessity of the hazardous operation of delivery in these cases of exhaustion.

Galvanism is the agent to be employed in these cases of nervous depression from loss of blood; it not only rouses the energies of the uterus, thereby enabling the practitioner to deliver when timely required, without, at the same time, making the least demand upon her already exhausted powers, which is the case when we have recourse to the manual operation of version and extraction of the child; but it is also a powerful general stimulant, and raises the power and action of the heart.

This happy result I have observed in several cases, and the power in question gives to this agent a great superiority over the secale cornutum in such cases.

[Dr. Radford, in conclusion, reiterates his expression of confidence in the power of galvanism in uterine hemorrhage, and promises an early publication of numerous cases of its successful application.]

*Lancet*, Dec. 5, 1846.

ART. 105.—*On the Means by which Uterine Hemorrhage is suppressed without Artificial Assistance.* By THOMAS RADFORD, M. D., Consulting Physician to the Manchester Lying-in Hospital.

(*Provincial Med. and Surg. Journal*, March 10, 1847.)

[Dr. Radford enumerates four powers by which uterine hemorrhage is spontaneously arrested. These are stated to be—1st. Syncope; 2d. Coagulation of the blood; 3d. Obliteration of vessels; 4th. Reunion of the detached portion of the placenta; 5th. The death of the child; 6th. Uterine contraction; 7th. Spontaneous separation of the placenta. Of the first power he observes:]

1. Complete or partial syncope, sooner or later, is induced when blood is discharged from the vascular system; the difference depends on a variety of contingent circumstances which may exist at the time. When we wish to make a quick and powerful constitutional impression by venesection, we make a larger orifice, so that the blood runs *pleno rivo*. We place our patient erect; and if of feeble constitution, or if the habits are bad, the effect is sooner produced, and continues longer. So in floodings, we find the relative effects very different; some women bear an immense loss without apparently suffering much from it, whilst others rapidly succumb from the same or even a less amount of discharge. Sudden and profuse gushes of blood speedily produce fainting, but slow and dribbling hemorrhages continue for a considerable length of time without producing this effect. Although these latter kind of floodings do not so suddenly depress the vital powers, yet they insidiously undermine them, and in many of these cases, the life of the patient is ultimately placed in more jeopardy than in those of the former class, provided the patient is not immediately destroyed.

Great caution is necessary not to allow a principle, based on false security, to lead the practitioner to procrastination in adopting active measures; his judgment ought not to be led astray by the quantity of blood which has been already discharged, or is now being lost, but he should invariably direct his attention to the influence produced on the vital powers, as the immediate and remote effects of loss of blood are relatively so different in different women. These different relative effects depend on a variety of circumstances, on the age, habits, and constitution of the woman; on the condition of the brain and general nervous system; on the functional and structural organic state of the thoracic and abdominal viscera; on the state of the uterus; on the position of the patient when the accident happens; and on the mode by which the blood is discharged, &c. When we are considering syncope as a natural and sanitary effect, capable of producing such favourable changes in the general circulation, and also in the vessels from which the blood is poured, which tend to suppress the hemorrhages, we ought not to overlook the fact that syncope is sometimes the precursor or harbinger of death.

Our diagnosis here should be as exact as possible, to judge between salutary and mortal syncope. If this state of the vital powers is produced by a large and sudden but not continued gush of blood, or by a less quantity lost when the patient is in the erect position, then conditionally it may be considered as likely to be useful. But if, on the contrary, the hemorrhage has been going on for a long time, although slowly, yet insidiously, and thereby at last producing the accumulated effects of loss of blood upon the system, we must view it as the prelude of death. By its salutary power, the action of the heart and arteries is at first totally suspended, and afterwards lessened in force and frequency, by which less blood is sent to the uterus, and time is afforded for coagulation to take place within, or in the immediate vicinity of the vessels.

2. When blood is effused, it speedily coagulates if there exists any substance which affords a *point d'appui* for the commencement of this process. It is said by physiologists, that the blood is more disposed to assume this change in case of ex-

cessive hemorrhage. When one of the umbilical arteries or veins is ruptured within the substance of the placenta, and the structure of the uterine and fetal surfaces are uninjured, the effused blood being confined, soon forms a clot, which effectually stops further bleeding. Other similar accidents happen during the same pregnancy in different parts of the placenta. But if the injury extends through either surface, coagulation does not so easily take place, as the blood so readily escapes externally into the vagina, or internally into the amnion bag, according to the situation of that portion of the organ which is disrupted. The characters of clots which form and are seen in the substance of the placenta, vary according to the length of time which has elapsed since the accident. Sometimes hemorrhage happens between the uterus and the placenta, and is confined in the centre by the circumference of this latter organ firmly maintaining its adherence. If this effusion is not great, coagulation takes place, and subsequent changes are accomplished, so that pregnancy goes on.

3. In disruptions of the placenta the coagula form in its interstitial structure. In several fatal cases of *post-partem* hemorrhage in which I have examined the uterus after death, I have found a small portion of adherent placenta, whose structure was so entirely pervaded with coagulated blood as at first to be mistaken for a clot; but on a more minute examination its true character was discovered. In another fatal case of this kind the practitioner in his report of the *post-mortem* examination, represented the infiltrated portion of placenta as a polypus. Coagula form within the uterine venous openings, upon and in the interstitial tissue of the placental tufts which enter into them, and are found left after the separation and expulsion of the placenta. The meshes of the decidual membrane afford a surface on which coagula form and adhere. Dr. Blundell and other writers speak in the highest terms of the anti-hemorrhagic powers of the large clots of blood which form in and fill the vagina, but which in my opinion are overrated. Although I do not admit that they prove as valuable a resource in flooding as has been mentioned, yet I would caution the obstetrician not to rashly remove them, for they do not directly arrest the bleeding; they indirectly assist by giving support to those formed above in the interstitial, placental, and decidual substances, which are of the greatest utility. Nevertheless, the presence of coagula in the vagina ought never to interfere with our more important duty to explore, so as to ascertain the condition of the os and cervix uteri, the presentation of the child, or if the placenta is abnormally fixed.

The important and valuable principles first fully developed by Dr. Jones, are admirably and indeed effectively adapted to prevent bleeding from arteries laid open by injuries, or by surgical operations in other parts of the body, but are not applicable in cases of uterine hemorrhage. Although the uterine arteries have a similar organization to that possessed by those elsewhere situated, yet they differ in size at different periods and perform very different offices, in the ungravid, in the gravid, and during the parturient and puerperal periods.

4. It is stated by some writers that a reunion takes place between the uterus and the detached portion of placenta, and that a return of flooding is thereby prevented; but my opinion is entirely at variance with this assertion, and from a great number of observations made by examination of the placenta after its expulsion, I am convinced that a recurrence of the hemorrhage from the placenta is alone prevented by a change which takes place in the organization of the detached portion.

5. The death of the child in utero may be immediately produced by hemorrhage, or it may more remotely happen by the impairment which its organic system has sustained. But it is not to be understood that the child is invariably or inevitably destroyed when hemorrhage occurs, but, on the contrary, it is born alive in the majority of these cases. However, statistics show that this event happens sufficiently often to justify the opinion that I have formed, that flooding does not take place, or if it does, it is very moderate in degree in such cases. Under normal circumstances, the utero-placental and the placento-fetal circulations exercise a reciprocal, although not an equal, influence on each other; and that there exists on the part of the placento-fetal, a great and essential derivative power. But the death of the child, immediately to a certain degree, and ultimately altogether, changes the functional and structural conditions of the placenta. "The



stimulus of necessity" on the part of the child for a supply has ceased, and consequently is altered. The arteries convey to the uterus less blood, and so there is less accumulated in the veins to be returned to the general circulation. The passage of blood is most likely first stopped in the umbilical arteries; and very soon after, if not simultaneously, that through the umbilical vein also ceases, and consequently both the arterial and venous ramifications in the placenta would have no blood passing through them.

The placenta would, therefore, at first be in a somewhat similar condition to that which exists after the birth and separation of the child; but after a short time it undergoes farther progressive changes in its organic condition. Its structure becomes less spongy and more firm; the calibres of the vessels are lessened and filled with fibrin; its decidual surface has a dried and shrivelled appearance, and is dotted with small coagula of different aspect, some being recent, while others look old and fibrinous.

During my practice I have attended a great number of labours in which the child was dead, and I have invariably observed, that there was little or no sanguineous discharge when the placenta was expelled, or afterwards, as that which is termed the lochia.

[The author illustrates the truth of this statement by the narration of four cases.]

6. The gravid uterus mainly consists of muscular fibres, which are greatly developed at the end of pregnancy. The blood-vessels, arteries, and veins have acquired a great size, especially the veins. The muscular fibres are longitudinal, circular, and oblique, each set being interlaced with the others. Portions of this tissue are intimately distributed around the arteries and veins, and indeed the outer coats of these latter vessels are composed of it. The arteries, which are considerably elongated, take a spiral and tortuous course through this texture; the veins are situated in different tiers in it, and each division freely intercommunicates by oblique openings with each other, and with those which lie nearest to the uterine cavity, Mr. Owen makes the following appropriate remarks:

"Every vein, however, when traced to the inner surface of the uterus, appeared to terminate in an open mouth on that aspect; the *peripheral* portion of the coat of the vein, or that next the uterus, ending in a well-defined and smooth semicircular margin, the central part adhering to, and being continuous with, the decidua. In the course of this dissection I observed that when the veins of different planes communicated with each other in the substance of the walls of the uterus, the central portion of the parietes of the superficial vein invariably projected in a semilunar form into the deeper-seated one, and when (as was frequently the case, and especially at the point of termination on the inner surface), two or even three of these wide venous channels communicated with a deeper sinus at the same point, the semilunar edges decussated each other, so as to allow only a very small part of the deep-seated vein to be seen. It need scarcely be observed how admirably this structure is adapted to ensure the arrest of the current of blood through these passages upon the contraction of the muscular fibres with which they are everywhere immediately surrounded."—Note to the paper, "On the structure of the placenta," in John Hunter's Works, edited by Palmer, p. 68.

Mr. John Goodsir passed a probe into a vein, and then slit it up with scissors, and repeated the same plan whenever he found the entrance of another branch. He found the anastomosis of the veins increase as they approach the internal surface of the uterus. "The spaces which they inclosed presenting the appearances of narrow flat bands. At last, in introducing the probe under the falciform edges of the venous orifices, it was found to have arrived at the placental tufts, which could be seen by raising the edges of the falciform edges," &c.

The tissues of the fundus and body of the uterus are first developed, and afterwards the cervix and os. These changes are progressive, and gradually enlarge the cavity as the *fœtus* and appendages increase in size. In normal pregnancy the muscular fibres are quiescent, and passively yield to this law, which has been imposed on the organ for the safety and growth of the ovum; but as soon as the *fœtus* is matured, so that it is capable of extra-uterine existence, a new law predominates, and contraction follows. The body and fundus being more muscular, are endowed with greater irritability and contractility than the cervix, and at first they are chiefly employed in expulsion. Some writers deny the existence of

muscularity, and consequently contraction, in the cervix, but the great majority admit that it is possessed of a great number of circular and some few longitudinal fibres. Its first change in labour is to dilate, to allow the passage of the child and secundines. This is said by some to be the effect of a wedge, formed by the membranes, mechanically forced down by the power above. Others again say it is a muscular act. My opinion is that it contracts when required in the process of labour. Normal causes applied induce irregular contraction. Dr. Campbell says that a contraction of this portion of the uterus is mistaken for what is described as hour-glass contraction of the body of the organ.

Normal uterine contraction, which is of two kinds,—first, temporary or alternate, secondly, permanent or tonic—is able to perform the parturient function when every circumstance which acts directly or indirectly upon this process, is equally favorable for this end. By its power the child and placenta are expelled, and the woman is secured against the dangers of flooding. It must not be partial in its operation, in order to achieve these important objects; but it must be universal; every muscular fibre must be actively engaged to afford a sanatory and protective influence. It is necessary to remember the length and tortuous course of the arteries, and also the course, relative position, and the peculiar valve-like openings of intercommunication of the veins; the imbedment of these vessels in the muscular tissue, and surrounded by it. We must also not overlook the fact that the calibre of these vessels is fully occupied by the blood passing in this state through the parietes of the full gravid uterus, whose superficies is extensive. Then we can be at no loss to understand why uterine contraction is so powerfully antihemorrhagic. The measurement of the surface of the gravid uterus at the end of pregnancy or beginning of labour, compared with the same organ when regularly and tonically contracted after the expulsion of its contents, is very different indeed. Dr. Blundell emphatically remarks, that the muscular fibres act as so many ligatures upon the vessels.

Notwithstanding the beautiful adaptation of the means to the end, when all is in a normal state, we frequently find in practice that there are constitutional and local conditions, physical and moral causes, which produce upon the uterus anomalous effects; and hence we find its action perverted, or altered in power, and in some cases altogether suspended. This anomalous state of uterine energy exists in every degree, and comes on at all times during or after labour, constituting what is usually called cases of complete or partial atony, or irregular contraction. Partial contraction assumes the character of spasm, and may seize any portion of the uterus to any extent, and to any degree of intensity. The fundus may firmly contract, whilst the body and cervix are in a relaxed state; the circular fibres of the body may contract, and yet the fundus and cervix be uncontracted, and thus constitute hour-glass contraction. Sometimes the os and cervix contract, and the upper portion of the organ is atonic, thereby affording a shut-up cavity, in which the placenta is sometimes incarcerated, and sometimes a large quantity of blood is effused into it, which is called internal flooding.

Different sets of muscular fibres irregularly and successively contract, and change in such a way as to form small chambers, which open out of the general uterine cavity. I will briefly cite a case selected from many others, illustrative of the capricious state (if I may use the term) of the muscular fibres. I was requested by Mr. P. to visit a patient who was flooding, one child being born, and another thought to be still in utero. Upon my arrival the hemorrhage continued. On placing my hand on the abdomen, I found the uterus large and generally doughy; about the middle was a hard and resistant portion, at the boundary of which there was felt a vacillatory sensation, which continued some time: it yielded in a short time, and another hardened portion was found. The sensations produced by these contractions led to the notion of the existence of a second child. I now introduced the hand, and only found the placenta and some coagulated blood. My attention was called to a circular opening at the anterior part of the womb, through which I could pass two fingers; to my surprise this spasm yielded, and was soon succeeded by a similar state in another part. I endeavoured to produce uniform contraction, but this migratory irregular action continued for some time, notwithstanding a large dose of laudanum was given.

Irregular contraction of a portion of the uterus in the vicinity of the placenta



causes partial separation of it, and flooding happens. Again, one portion of the uterus in the same neighbourhood may be atonic, and the rest of the organ well contracted, and so flooding continues. Whenever and by whatever cause a partial contraction of the placenta happens, irregular contraction of a portion of the uterus is nearly sure to take place. Spasm or irregular uterine contraction causes hemorrhage in two ways—first, by directly producing a partial disunion of the placenta from the uterus; secondly, by acting mechanically, so as to impede the free return of blood along the veins to the heart. In all cases of flooding, except when the placenta is abnormally fixed to the uterus, regular, equal, and firm uterine contraction will always secure the patient against the dangers of the accident. I hesitate not to say always, because an extensive hospital practice has enabled me to speak positively on this subject. But if the uterus is in any degree atonic, or its action irregular, however partial, hemorrhage will happen, which can alone be arrested by restoring uniform contraction, or an equilibrium of action throughout the entire uterine muscular tissue.

These remarks are made with a knowledge of Dr. Gooch's, Dr. Rigby's, Dr. Ingleby's, and Velpeau's opinions. Dr. Gooch relates a case of *post-partum* hemorrhage, in which he says the uterus was firmly contracted, and depended on the exalted state of the general vascular system. "Medico-Chirurgical Transactions," vol. xiii., part 1. Mr. Robertson has already shown that Dr. Gooch's inferences are not true (North of England Journal); I, however, do not think that he has explained the cause of the discharges in Dr. Gooch's case, in supposing that the uterus relaxed. My opinion is that there existed irregular contraction, some portion of the organ being in an atonic state, not accessible to Dr. Gooch's hand externally applied on the abdomen.

In placenta prævia the hemorrhage is increased by uterine contraction, as long as the placenta is partially adherent.

Spontaneous rupture of the membranes, and the discharge of the liquor amnii, induces uterine contraction, which effectually restrains hemorrhage in the majority of cases of accidental, and in those cases of unavoidable floodings which are caused by a partial implantation of the placenta over the os uteri.

The natural powers are equal to the achievement of most important ends during labour, when mechanical causes exist which oppose the passage of the child in labour.

7. When the placenta is placed centrally, or nearly so, over the os uteri, it is sometimes spontaneously expelled before the child, an event which happens more frequently than has been usually supposed by obstetricians. Hippocrates was acquainted with the fact that the placenta is sometimes spontaneously expelled before the child, and knew the danger of this event to the child. He says, "that the after-burthen should come forth after the child; for if it come first, the child cannot live because he takes his life from it, as a plant doth from the earth." The father of medicine no doubt knew that the coming forth of the after-birth before the child, was not attended with the same risk to the mother as to her offspring, or he would have recorded his opinion upon this point.

Obstetric writers up to comparatively a recent date, since the time of Hippocrates, have not mentioned this subject, although they must have met with cases, and have been acquainted with his writings. Whenever the placenta is partially detached in cases of placenta prævia, and the child is still alive, hemorrhage inevitably happens. The quantity of blood discharged is not always the same, but is more or less profuse, according to the concurrence of a number of contingent circumstances. Sometimes the discharge is very excessive when the placenta is only slightly separated, and sometimes the hemorrhage is moderate when the placenta is extensively loosened. But the aspect of matters is changed by a complete separation of the placenta; the variation in the degree of discharge marked above, is not now observed to exist: there is a total cessation of the bleeding, and it forms an exception to the general rule when hemorrhage happens after the placenta has been completely loosened from its attachments, and protruded from the uterus into the vagina.

On the 10th day of December, 1844, I delivered a lecture on galvanism applied to the treatment of uterine hemorrhage, in which I then stated that without any great pains I had brought forward before the profession "thirty-six cases illustra-



tive of her (Nature's) powers, in expelling the placenta before the child." This number might have been very considerably augmented by bringing cases which were then already published, but my object was not to make a great parade of authorities, but only to mention such as were in the reach of every obstetric practitioner. At the time, I made the following remarks:—"Now, the bulk of these cases, gentlemen, have been detailed without any specific practical object, and, consequently, are more valuable to my present purpose than if they had occurred to myself, and had been brought forward to serve my own particular views. You may refer to many of them yourselves, and you will find in nearly all of them that the hemorrhage was suppressed after the placenta was thrown off."—*Provincial Medical and Surgical Journal*, 1844, p. 603.

Since then Dr. Simpson published (in the London and Edinburgh Monthly Journal of Medical Science, No. 51, March, 1845.) tables of 141 cases, some of which, however, were not cases of spontaneous expulsion. These tables include those cases which had already been brought forward by me, and some others which were afterwards communicated by me.

By the kindness of several professional gentlemen I have collected sixty, which show the following results:—In all, the hemorrhage was great before the placenta was loosened: in fifty-five of this number it was completely suppressed after the separation of the placenta; in three it continued, of which in two it was slight, in one it was profuse: in thirteen the placenta was forcibly expelled, followed immediately by the child; in twenty-two to three hours elapsed; in twenty-seven the child was turned and extracted immediately. Forty-five women recovered, fifteen died. Fifty-five children were lost, five only living.

In the above-mentioned cases there is only one in which flooding to any degree continued after the placenta was completely separated, and this proved fatal. In the remaining number of those who died, the fatal impression was made before the separation was accomplished. In a few cases already published slight hemorrhage continued, and some deaths occurred, not dependent on the after-bleeding, but, as above-mentioned, from the effects produced before. These cases must not be allowed to invalidate the inference that "hemorrhage ceases when the placenta is completely separated." We can readily understand why this should happen, if we physiologically investigate how the utero-placental and the placento-fœtal circulations are carried on.

When a partial separation of the placenta takes place, whilst the fœtus in utero is still living, hemorrhage is sure to occur, because two sources exist from which blood can escape. (Vide *Lancet*, No. 9, February 27, 1847.) One current of blood comes through the medium of that portion of the placenta which still adheres to the uterus, and is discharged from the surface of that portion of the placenta which is detached; the supply of blood is demanded by the child from the maternal system, and when sent, it cannot from the nature of the accident return, and, therefore, is lost; the other current of blood which runs away comes from the uterine venous openings. But when there is complete disjunction of the placenta from the uterus, the case stands quite different: no maternal blood can be discharged from the placenta, because it is now placed in the position of a foreign body, having no structural or physiological relation to the womb. Rupture of the membranes either simultaneously happens or precedes the separation and expulsion of the placenta, except in cases where the entire ovum is expelled at once, which very rarely occurs. The uterine contraction, which must at this time have been strong, is now increased, which brings the presenting part of the child to occupy the lower segment of the uterus, and to bear mechanically on the exposed venous openings. The calibres of the vessels are also diminished.

Notwithstanding the truth of the above conclusion, that complete detachment of the placenta suppresses hemorrhage, yet we must not allow ourselves to fall into serious error, to wait in expectation of such an event; because, first, there do not exist signs which will lead us to expect such a termination; secondly, the vital powers may be completely sunk before the separation is achieved. Hamilton, Collins, and Dr. Ramsbotham, senior, were all acquainted with this fact.

ART. 106.—*Treatment of After-pains.* [The following remarks form part of some practical suggestions by Dr. Cattell. He observes:]

Many females suffer most distressingly from the pains consequent on a consum-

mation of the natural process of parturition. The internal administration of opium, as a sedative, has met with general condemnation, from the supposed idea, that by diminishing the pains it impedes the restorative contractions of the uterus. The supposition may be true, but the inconvenience may be remedied. Admitting the full force of the objection, that powerful sedatives produce effects identical with those previously stated, and that the after-pains and exhaustion are such as to require the immediate exhibition of a powerful sedative, what plan is to be pursued? According to the modes hitherto adopted, powerful doses of a sedative are given and repeated for days in succession, and no precaution taken in many instances to ensure uterine contraction.

I knew the case of a lady treated by a careless or ignorant practitioner, precisely in the manner I have described, and whose uterus never did subsequently contract to its normal size, but created the sensation of a foreign body, cold and expanded. But this condition of the uterus did not lay an interdict on impregnation; she bore another child, and I think miscarried more than once; still the uterus would not resume its original character; the sensations were irresistibly permanent.

After-pains are not always coexistent with the termination of labour: their accession may not transpire till some hours subsequently, when their intensity becomes in this, as in the former instance, quite insufferable.

By the procedure we are about to suggest, full sedative doses of opium or morphia may be given and repeated as required:

1. On calling to our aid the assistance of galvanism, in the promotion of the natural restorative contractile powers of the uterus, which are suspended, or modified, under the continued influence of powerful sedatives.

2. There is, however, another mode, which is more conveniently adopted, and will be frequently found to answer the purpose; I allude to the use of an anodyne liniment, applied by circular friction over the external uterine region.

The liniment which I have generally employed is composed of the extract of belladonna, tincture of opium, and soap liniment. This composition will alleviate the local pain; and at the same time, by its application in the manner referred to, the uterine contractions will be promoted.

*Lancet*, Dec. 19, 1846.

ART. 107.—*Case of Separation of the Pelvic Bones during Labour.* The narrator of the following case, Dr. Hudson, of Chester, U. S., was called on to attend Mrs. M——e, a woman of small stature, in her fifth accouchement. From her peculiar appearance one might suppose a plurality of fetuses, or an unusual quantity of the liquor amnii; neither, however, proved to be the case, though the former was intimated by some of the attendants; but the result was a single child of large size, with a well-ossified cranium, born in a state of asphyxia, from which it was soon resuscitated, and did well. The membranes protruded and were ruptured, and the cervix uteri completely dilated before the engagement of the head, which presented with the occiput towards the left acetabulum of the mother. The pains had been severe for several hours previous to the evacuation of the liquor amnii, and shortly after that occurrence came on with redoubled violence, during one of the most forcible of which a sudden report was heard (proceeding manifestly from the pubic region of the mother), which was said by some of the ladies present to be as “loud as a pistol,” though it had not a similar sound. The labour, however, progressed, and was terminated in about an hour after this accident, but not without great suffering to the patient in the pubic and sacro-iliac regions, aside from the pains of expulsion, and which distress did not subside when the delivery was completed, and it was found that she was utterly unable to stand, or to use the inferior extremities. Upon examination (a painful one to be sure) the ossa pubes were found to move readily upon each other, and there was a general mobility of the bones of the pelvis, as well at the sacro-iliac junctions as at the symphysis pubis. Dr. Hudson had her placed carefully in bed upon her back, in which position she generally lay for a number of weeks, for she could not turn upon her side without assistance. He then had a roller, about four inches wide and six or eight yards in length, passed round the pelvis, well secured, and re-applied as often as it became loose or displaced. An antiphlogistic course was

pursued to prevent inflammation, which, however, did supervene to such an extent as to render catheterisms necessary. With such a course of treatment she was able to walk a little in the course of six or seven weeks (the pelvis being well bandaged), but generally kept her bed for nearly three months (doing such light work as knitting, &c.), and found the pelvis strengthened by wearing the bandage (which she learned very well to apply herself) for a much longer time. Eventually the pelvic junctions obtained nearly their former strength, and Dr. Hudson attended her in her next confinement, about two years afterwards, viz., on the 17th July, 1838, at which time she had comparatively an easy time, being delivered of a child of about seven and a half or eight pounds, and from which accouchement she had a very rapid convalescence.

*Amer. Journ. of Med. Science*, Oct. 1846.

## SECT. II. DISEASES OF CHILDREN.

### ART. 108.—*Pathology and Treatment of Croup.* By MR. HIRD.

(*Reported in Lancet*, Dec. 5, 1846.)

The author of this communication believes croup to be an inflammatory disease of a specific nature, and distinguishes it from the purely spasmodic closure of the glottis, which, in its commencement, it often closely resembles. He states that in examination of fatal cases, where the patients survived the attack only a few hours, and in which the inflammatory symptoms were the most severe, he observed only slight traces of albuminous exudation, the mucous membrane of the trachea and larynx presenting a red and swollen appearance, and being covered with a tenacious and sanguineous frothy mucus. When death occurred two or three days after the commencement of the attack, and where the inflammatory symptoms, although fully developed, were of a less acute character, a pseudo-membrane, of a grayish-yellow colour, and about a line in thickness, occupied either the trachea only, or the trachea, larynx, and bronchial tubes. In some cases, a viscid mucopurulent secretion adhered to the mucous membranes of the air-tubes. In the air-cells and parenchyma of the lungs, a reddish serum was frequently found; hepatization, also, was occasionally observed. The croupy membrane, he stated, may adhere throughout its entire extent to the mucous membrane of the air-passages, or hang loose from a pedicle, like a polypus, or attached in the centre, and free at one or both extremities, or it may be completely separated from the mucous membrane by a muco-purulent secretion.

In the treatment of croup, Mr. Hird stated, that during the last four or five years he had never resorted to general blood-letting, and that he was induced to adopt this course, from witnessing the unfavourable result which generally followed its use, both in his own practice, and in that of some of his professional friends. Croup, he considers an inflammation of a character bearing some analogy to erysipelas, or to inflammation occurring in scrofulous individuals, which occasions the formation of a pseudo-membrane, that will require for its removal a certain amount of vital energy, both in the respiratory organs and in the system generally. The inflammation of croup he believes to be less under the influence of blood-letting than healthy inflammation, and that whether it be looked upon in reference to the alteration to be expected from it on the progress of croup, or on the subsequent effects of the evacuation on the system, it will be found both unsatisfactory and dangerous.

The class of cases in which he occasionally prescribes leeches, or a cupping-glass to the chest, are those acute affections in which there is not the same disposition to the formation of a croupy membrane, and in which the larynx is affected. The inflammation, he considers, approaches more to the character of healthy inflammation, is more under the control of blood-letting, and is apt to cause effusion near the glottis, which speedily proves fatal.

In the early stage of both varieties of the disease—i. e., both in the ordinary tracheal disease, as well as in the more acute affection in which the larynx is



affected—he gives, in the first instance, an antimonial emetic, the dose varying from a quarter of a grain to a grain, according to the age of the child. After vomiting has been produced, he orders three grains of calomel, and if necessary, repeats the dose, that the bowels may be freely acted upon. If, by these measures, the febrile and inflammatory symptoms are in some degree subdued, he finds the greatest benefit from the free use of the alkalies. So long, however, as the fever continues unabated, and the heart's action unsubdued, he keeps up the state of nausea with a solution of the potassio-tartrate of antimony, in doses varying from a twelfth to a quarter of a grain every half-hour or hour, until a decided check to the symptoms is produced. As a local application to the throat, he advises a flannel bag half filled with hot salt, as recommended by Mr. Kirby, of Dublin. The warm bath, and a blister between the shoulders, or on the sternum, for an hour or two, are often of great assistance. Mr. Hird considers that the alkalies act by allaying the irritation which produces the paroxysms of spasm, in the same manner as they allay the cough in whooping-cough; and that they are as valuable in promoting the absorption of the albuminous exudation thrown out in this disease, as they have been proved to be by Sir. B. Brodie, in the removal of large fatty tumours occurring in various parts of the body. He prescribes ten or fifteen minims of the liquor potassæ every four hours, or in smaller doses more frequently repeated. At a later period of the disease, he gives the decoction of senega, combined with ipecacuanha, squills, and ammonia.

ART. 109.—*Alum in Pertussis*. [Dr. Davies thus speaks of the employment of alum in pertussis] “After a long trial, I am disposed to attach more importance to alum as a remedy in whooping-cough, than to any other form of tonic or antispasmodic. I have often been surprised at the speed with which it arrests the severe spasmodic fits of coughing; it seems equally applicable to all ages, and almost to all conditions of the patient. I was formerly in the habit of taking much pains to select a certain period of the illness for its administration, and of waiting until the cough had existed at least three weeks, taking care that the bowels were open, the patient free from fever, the air-passages perfectly moist, and the disorder free from complication of any kind. A continued observation of the remedy, however, has induced me to be less cautious, and I am disposed to think that a very large amount of collateral annoyances will subside under its use. The fittest state for its administration will be a moist condition of the air-passages, and freedom from congestion, but an opposite condition would not preclude its use, should this state not have yielded to other remedies. It generally keeps the bowels in proper order, no aperient being required during its use. The dose for an infant is two grains daily; and to older children, four, five, and up to ten or twelve grains may be given, mixed with syrupus rhorados and water. It is seldom disliked.”

*Underwood's Diseases of Infants*, last edition, p. 432.

ART. 110.—*Treatment of Eneuresis*. [Dr. Chambers states that the following is an outline of the treatment which he has generally adopted, and which he thinks will be found capable of overcoming this disease with very few exceptions.]

No fluids are to be taken within three hours of going to bed. The bladder is to be emptied immediately before going to bed, and in about three hours after the patient is to be awake, and the contents of the bladder are to be again evacuated. A blister is to be applied occasionally to the sacrum; this answers a double purpose—it acts as a stimulant to the bladder, and it prevents the patient from sleeping on his back, and thus keeps the urine from gravitating to the most irritable part of the bladder—its trigone. To restore the tone of the bladder, I give a combination of equal parts of tincture of cantharides and the muriated tincture of iron, in doses of twenty drops thrice a day; and in some cases use the cold dash to the genitals, or the cold shower-bath.

[In a peculiarly obstinate case, he derived great benefit from cauterizing the orifice of the meatus with nitrate of silver, so as to cause pain when urine passed over it sufficient to wake the patient. Dr. Chambers speaks of this expedient as if it were new; it has, however, been long recommended in boys, not only in this complaint, but as a means of preventing masturbation.]

• *Prov. Med. Journal*, Dec. 30, 1846.

ART. 111.—*On Polypi of the Rectum in the Infant.* By M. GUERSENT, Jun.

(*Gazette des Hôpitaux*, 12 Nov. 1846.)

When a child suffering from this affection is brought to the surgeon, it is frequently at first sight supposed to be labouring under prolapsus ani. The symptoms are obscure and easily confounded with those of other diseases. They are chiefly bloody stools, with frequent tenesmus. When the polypus has acquired larger dimensions, defecation becomes more and more difficult, and the tumour is generally expelled by the effort. This is seen to be of variable size in different cases, of a reddish colour, and smooth. It has been frequently remarked by the author that the fecal mass is marked by the projection of the tumour, which indents it into the form of a gutter. This is no more than might be expected.

Authors are not agreed as to the nature of these tumours; some regard them as fibro-cellular; others consider them as constantly of a mucous texture. This is the opinion entertained by M. Stoltz, to whom we are indebted for some very able researches upon the affection. According to this writer, polypi are generally caused by prolapsus of the rectum, which, by its frequent occurrence, causes a portion of the mucous membrane to be pinched up by the sphincter, and thus to become the starting-point of the tumour. M. Gendrin admits that this explanation may be correct in some instances, but he thinks that it is not applicable in the majority.

It sometimes happens that the tumour is implanted so high up that it does not pass out of the rectum. The nature of the case is then rendered more doubtful. After a time it is apt to become fungous and to bleed readily, in which case it is liable to be mistaken for a hemorrhoidal tumour. The diagnosis can only be formed by a tactile examination. The many other affections to which the part is subject, as fissure, condylomata, etc., are so comparatively rare in infancy, that they are scarcely likely to give rise to mistake.

The usual effect of these tumours is to give rise to repeated bleedings, by which the general health of the infant is rapidly deteriorated; it therefore becomes necessary to effect a speedy cure. They may sometimes disappear spontaneously, or drop off by the gradual elongation and consequent narrowing of the pedicle. The author has observed this termination in several instances, but does not consider it safe to wait for such an event.

The removal of the tumour may be effected in several ways, by cauterization, torsion, excision, or ligature. The author recommends the latter as the most free from danger, unless the pedicle is extremely delicate, when it may be cut through at once. The ligature is applied by the guidance of the index-finger, when the tumour is not implanted high up. When it is more deeply seated the author dilates the anus with a bivalve speculum. The tumour is then seized with an appropriate forceps, and the ligature applied as in uterine polypus.





# REPORTS

ON THE

PROGRESS OF THE MEDICAL SCIENCES.

*January—June, 1847.*

THE intention of the following Reports is to pass in review the principal additions to each department of Medical Science, which have been placed on record during the preceding six months. It is not contemplated that they should be confined exclusively to the notice of what is new; any fact or doctrine which may be considered practically useful, will, although not strictly novel, be regarded as worthy of commemoration. It must be obvious to all who are aware of the immense mass of information which is almost daily put forth by the medical press of this and other countries, that the notice of every subject would be an impossibility. It therefore devolves upon the writers of each Report to select only such articles for retrospection as may possess superior recommendations, either of an intrinsic character, or in relation to the main end and aim of all medical knowledge—the alleviation of suffering and disease.

## I.

# REPORT ON THE PROGRESS OF PRACTICAL MEDICINE, PATHOLOGY, AND THERAPEUTICS.

BY THE EDITOR.

---

[The figures in brackets refer to the corresponding Articles in the Abstract.]

---

## PART I. GENERAL PATHOLOGY.

IN the department of General Pathology properly so called, the information distributed over the past six months, compared with that of the semestrial period immediately preceding, must, upon the whole, be considered as below the average, both in quantity and importance; for although several interesting communications have from time to time appeared in the medical journals, of some of which we shall shortly give an account, no separate work in this department has issued from the press in this country, nor, as far as we have had an opportunity of ascertaining, on the Continent.

### § I.—*Inflammation.*

I. The termination of the elaborate series of articles on the nature and general doctrines of inflammation, which have for some time past been in the course of publication by Dr. Robinson, affords us the opportunity we have long been anxious to find, of laying an abstract of their contents before our readers.

The author commences by observing that the definitions of inflammation hitherto generally received are descriptive of the phenomena of the process, rather than of its nature. This defect he shows to be due to the absence of well-directed experiment and well-arranged method of investigation, a failure which he hopes to avoid in the present inquiry. This inquiry, extensive as it is, is limited to the first stage of the process, in which the retarded current of blood still retains its fluidity, and is therefore subject to hydrodynamic forces. Before, however, he enters upon the study of the pathology of the circulation, the author considers it necessary to allude briefly to certain conclusions in a former paper\* respecting the normal action of the minute blood-vessels, and of the means by which these actions are accomplished. To this paper the reader is referred.

In application of these views to the pathology of inflammation, Dr. Robinson first proceeds to demonstrate that the physical disorder of the capillary circulation just alluded to invariably exists in the vessels of an inflamed part; and affirms that whatever objection may be urged against this theory of lateral pressure as the essence of inflammation, the fact of an unnaturally distending force in the column of blood in the small vessels of an inflamed part cannot be denied, and is in fact, admitted in the admission by pathologists in general of a certain amount of obstruction in inflamed capillaries.

In the continuation of his paper, the author next examines how far the immediate effects of inflammation are referable to the physical condition of the blood contained in the vessels of the affected part. In this examination, he first compares these effects with the results of his experiments on the kidney, by which their identity is satisfactorily established. In the next place, he again refers to the proofs, that a morbid increase of the lateral pressure of the blood-column

\* On some Points in the Mechanism, &c., of the Circulation, Med. Gazette, May, 1844.



exists in every case of inflammation; and from these premises determines that the primary effects of inflammation are clearly referable to this lateral pressure.

The author now inquires in how far the remedies found useful in inflammation are calculated to remove the local disorder of the circulation which he supposes to be identical with that disease. These remedies, he observes, accord closely with the therapeutic indications which arise out of his views of the pathology of the disease; for, with the exception of mercury and some other articles of the *materia medica*, of the rationale of whose action we are ignorant, the remedies employed with success are precisely those which act in restoring the balance of pressure on either surface of the capillary vessels. One of our main objects in the treatment of inflammation is unquestionably the prevention or removal of the effusion into the adjacent cellular tissue, which effusion, according to the author's theory, originates in an increased lateral pressure of the blood within the vessel, and also indirectly from a diminution of pressure external to the same vessels. Our treatment, therefore, endeavours to diminish the former pressure, and to increase the latter. The first point we obtained by blood-letting, purgatives, digitalis, colchicum, and other means which possess the power of reducing the heart's action. These act by diminishing the general pressure of the blood in the arterial system, and with it the local pressure in the inflamed capillaries. The second object is effected by mechanical support, friction, cold, and astringents.

From the results of this examination, which in the original is given at considerable length, the author considers that he demonstrates the truth of his proposition, that the morbidly increased lateral pressure of the capillary blood-columns, which invariably accompanies inflammation, is directly referable to the causes, productive of the effects, and relieved by the remedies employed for inflammation; and he thinks himself therefore entitled to maintain the identity of the two things.

After these preliminary observations, Dr. Robinson enters at once upon the consideration of the laws regulating the effects of obstructed capillary circulation, as deduced from a course of experiments upon the kidney. These experiments are related at length in the 26th volume of the "*Medico-Chirurgical Transactions*." Their object was to ascertain the effect produced upon the composition of the urine by the application of a mechanical obstruction to the return of blood through the renal vein, and a list of twenty such experiments suffice to establish the writer's first general conclusion, viz., "that an obstruction to the return of blood through the renal vein will cause the presence of either liquid albumen, coagulating lymph, or blood in the urine, secreted by a kidney otherwise healthy."

As the relative quantity and even the nature of the morbid product varied much in these experiments, the urine secreted by the affected kidney being sometimes very slightly albuminous, at others highly charged with that principle, sometimes containing coloured blood, and occasionally fibrinous coagula and gelatinous lymph, it became important to ascertain if possible the circumstance which determined this variety in the effused matters. The first idea which occurred in explanation of this point was, that it might perhaps be regulated by the degree of completeness of the obstruction. But a second table, giving the results of eight experiments, in all of which the closure of the renal vein by ligature was immediate and complete, and in which the urine nevertheless presented the same variety in the nature of its morbid ingredients, shows the non-existence of any essential connection between these two circumstances.

Having thus gained one negative answer to the question under consideration, the writer then proceeds still further to narrow the inquiry by placing before the reader a third table of experiments, to prove that the nature of the effused products bears no proportion to the increase in the quantity of blood contained in the vessels of the affected kidney, nor consequently to the extent of the dilatation of those vessels. This table represents the relative weights of the healthy kidney and of that artificially engorged, together with the peculiarities noticed in the composition of the urine secreted by the latter; and it thus appears, that whilst in one instance a kidney, which had gained little more than one half in weight, secreted bloody urine, other kidneys, the weight of which had been doubled, and in one experiment even trebled, merely presented, in their secretion, a quantity of liquid albumen. He observes:

"It having thus been shown that neither the degree of completeness of the obstruction, nor the extent of the dilatation of the vessels, constitutes the peculiar

cause of the difference in the results induced, let us now proceed to examine the only remaining physical agency to which that difference can possibly be ascribed: and, as calculated to elucidate the nature, operation, and source of this agency, it may be well briefly to consider the general effects produced by the obstruction of any freely moving mass of fluid. I have, throughout these investigations, had constant occasion to dwell upon and apply this general hydraulic principle, viz., that the degree of lateral pressure which a fluid exercises while traversing a tube, or system of tubes, is altogether dependent upon the relative facilities afforded for the influx and efflux of that fluid. And, as a corollary from this law, that any circumstance which tends to lessen the rate of discharge, while the rate of influx continues unaltered, will constantly, and in a very rapid ratio, increase the lateral pressure of the column of fluid, till it becomes equal to the whole impelling force.

"Now, in the case of the fluid traversing the vessels of the living body, that impelling force is clearly derived from, and proportionate to the amount of pressure of the general mass of aortic blood, which pressure is known to fluctuate very considerably, and sometimes very suddenly, from various circumstances, particularly those affecting the vigour and frequency of the heart's action. It follows, therefore, that the actual amount of lateral pressure, with which each minute column of detained blood acts against the walls of its containing vessel, will, in every case of obstructed capillary circulation, be wholly regulated by two essential circumstances, viz., the degree of completeness of the local obstruction on the one hand, and the actual amount of impelling pressure then resident in the mass of arterial blood on the other." After pointing out the necessity of bearing in mind the peculiar physical composition of the blood while circulating in the vessels of a living animal, and the varying cohesiveness of its aqueous, albuminous, and fibrinous constituents, the writer strongly expresses his conviction that the proof of the dependence of the effusion of the above-named substances is in every case regulated by the amount of lateral pressure or expelling force existing in the columns of fluid blood contained within the vessels.

The length of this communication prevents our following the author throughout the entire extent of his valuable observations, and we therefore unwillingly pass over his explanations of congestion, or determination of blood, and its distinction from inflammation, and proceed to mention his opinions respecting the treatment of inflammation, as arising from his views of its pathogeny.

Dr. Robinson commences this part of his subject by alluding to the occasional difficulty in diagnosing true inflammation, both from its not unfrequently proceeding without the development of its characteristic symptoms, and also from the close resemblance to it which non-inflammatory conditions assume: as certain constitutions of the latter he instances the pseudo-inflammatory conditions of puerperal women, as those in which an error is most frequently committed, and most likely to be followed by lamentable consequences.

He divides the therapeutical agents by which we reduce the general pressure of the arterial blood, into—1st, those which act by diminishing the quantity of the circulating fluid; and, 2dly, those which directly lessen the force and frequency of the heart's action. Under the first category we have:

1. The direct abstraction of blood.
2. The drawing off of its aqueo-albuminous portion.
3. Abstinence from nourishment.

Respecting the general abstraction of blood, he gives a wholesome caution that it should never be instituted, and still less repeated, without a strict previous inquiry into the peculiarities of the patient's constitution, and suggests that, excepting in inflammations of vital organs, the general abstraction of blood should be limited to individuals in whom inflammation is connected with a state of general plethora.

The local measures by which the pressure of the capillary blood-columns is relieved are also threefold.

1. The escape of a portion of the blood itself by spontaneous rupture of the vessel, or by puncture, leeches, &c.
  2. The escape of the liquor sanguinis.
  3. By the use of derivatives.
- The author's remarks on these subjects do not call for particular notice.



The removal of the immediate effects of inflammation is the subject next brought under consideration. The physiological action most engaged in this act is that of vascular absorption, the generally received theory of which, on the principle of endosmose and exosmose, is rejected by the author in favour of his own opinion, that the active cause of that function is the *lateral draught* created by the streams of blood moving through the porous capillaries. In accordance with this view he explains the action of friction and local stimulants.

With respect to chronic inflammation, in which there is merely local hyperæmia, without much morbid increase in the lateral pressure of the accumulated blood, general and local measures, calculated to give tone to and increase the contractility of the relaxed capillaries, are chiefly indicated. With this object the constitution may be strengthened by generous diet, change of air, and tonics, whilst local astringents and stimulants, aided by mechanical support, are applied when practicable.

This concludes the writer's sketch of the obstructive disorders of the circulation, and of the measures required for their removal; but Dr. Robinson avails himself of the opportunity to offer a few remarks upon the very limited progress which physiological and pathological science has yet made in those departments most intimately connected with the circulation of the blood. He expresses an opinion that, notwithstanding the universal reverence paid to Harvey's memory, and the unlimited praise accorded to his system of investigation, the *strictly rational* doctrines of that great man have never been really popular. Other systems, the adoption of which involved less labour, and in the defence of which the imagination could be more copiously employed, have, up to the present period, held sway in the medical world. And doubtless many ages may yet elapse ere all those important relations of the circulation which undoubtedly exist, and to which Harvey himself has almost prophetically alluded, shall be fully brought to light.\*

Mr. Addison has likewise made inflammation the subject of cursory remark, in an essay entitled "Laws of Morphology of the Textures in the Human Body."†

The following communication may with propriety be mentioned in connection with the above researches.

2. *On the Causes of Exudation.*—In a continuation of his important contributions to general pathology, Dr. John Hughes Bennett has taken up the subject of pathological exudation, the causes of which he endeavours to elucidate. The series of changes which precede this action of the capillary vessels are stated to be—1st, a narrowing of these vessels, with consequent increased rapidity of the circulation; 2d, a subsequent dilatation of the same vessels, with retardation of the current; 3d, irregularity and oscillation of the current of blood; 4th, the motion of the blood ceases, and the vessels appear fully distended; 5th, and lastly, the liquor sanguinis, sometimes accompanied by the blood-corpuscles, is exuded through the capillary walls, which in the latter case are ruptured. Dr. Bennett remarks that this view of the change preceding exudation is perfectly in analogy with the effect of stimuli on other muscles, namely, at first increased contraction, and afterwards paralysis, and is therefore sufficient to account for the initiatory part of the process, the contraction and dilatation of the vessels, with increased and subsequent retarded flow of blood; but it does not account for the stagnation of the blood, nor for the exudation. The latter phenomena are generally attributed to obstruction, the blood globules becoming glued together; this explanation, however, is considered by the author to be opposed to observation; for in the first place the stagnation of the blood does not, as is supposed, proceed from one point; and, secondly, the lymph-space near the walls of the capillaries is still evident when the blood moves slowly, and only disappears at the moment it is arrested. The author likewise objects to the theory advanced by Dr. Williams and Mr. Addison, that the obstruction is due to the generation of a large number of colourless corpuscles, which adhere to the sides of the vessel. He observes that he has long doubted the truth of this assertion, and has recently performed experiments, the result of which convinces him of its fallacy. He thinks that the above-named physiologists may have been deceived by the rendering distinct of the nuclei of the epidermic cells in the web of the frog's foot; which nuclei closely resemble the colourless blood-corpuscles.

\* Med. Gaz., 1846, 1847.

† Prov. Med. and Surg. Journal, March 10, 1847.



The explanation, the author observes, is also negatived by the recent investigations of Remak, who has noticed that the proportion of the colourless corpuscles is increased by abstraction of blood, and that the portions first drawn in inflammation contain very few. Dr. Bennett concludes, therefore, that the cause of the obstruction is yet to be discovered, unless we are content with the hypothesis of increased attraction between the blood and the parenchyma. In the last place, Dr. Bennett criticises the opinion of Dr. Robinson, that exudation is caused by lateral pressure exercised on the walls by the *vis à tergo*. He denies the trustworthiness of Dr. Robinson's experiment of tying the renal vein, and asks whether the changes in the capillaries are not due to direct mechanical irritation (drawing the kidney out of the abdomen), with exposure to the air.

## § II.—Zymotic Diseases.

3. *Fever*.—We have nothing to notice in the present Report which advances our knowledge either respecting the nature or the treatment of fever, unless the communication of Mr. Stallard, which is found among our extracts (Art. 2), should be thought to come under that denomination. We may mention, however, in reference to the epidemic occurrence of fever, that Dr. Wardell's elaborate account of the Edinburgh fever of 1843-4 still continues,\* and that Mr. Sibson has furnished an account of fever prevalent at Nottingham between July and December of last year, the particulars of which may be thus briefly stated:—

The total number of cases amounted to 899, of which 223 were treated in hospital, 676 as out-patients. The fever was characterized by abdominal disturbance, and depression of both nervous and circulating systems. Diarrhœa was an almost constant symptom. The tongue varied in appearance; sometimes it was pale and moist, or furred, and cleaner at the edges; in others its surface was red and glazed, or dry and fissured, and covered with a dark film. The countenance expressed prostration, the lips quivered, and the cheeks and eyelids were tremulous. The worst cases were marked by extreme debility, muttering, delirium, profuse diarrhœa, tympanites, and bloody stools.

Of 223 cases admitted into the hospital, 19 proved fatal, and 18 were examined after death. Of these, Peyer's glands were found to be enlarged in 17; ulcerated in 13. The mesenteric glands were frequently enlarged and softened; the spleen was, in the majority of cases, unaffected. The lungs were gorged, and in a few instances exhibited patches of pneumonia. The brain was found to be healthy, even where the cerebral symptoms had been severe. In one instance in which maniacal delirium had been present during life, the arachnoid was seen to be unusually dry.

Mr. Sibson has added some interesting details respecting the sanitary state of the town of Nottingham, from which it is clearly ascertained, that in general the epidemic originated in a culpable want of drainage and ventilation, aided by the influence of an unusually hot summer. The benefit of pure air was remarkably shown in the amelioration of patients by their simple removal from their squalid abodes to the wards of the hospital. The author alludes to one case in particular in which benefit was derived from the change of ward three or four times during the illness; and mentions the fact that in many instances the convalescent cases relapsed upon the admission of new cases.

Mr. Sibson regards this fever as identical in type with the "fièvre typhoïde" of Louis, and enters into an accurate comparison of the two diseases, by which the truth of his statement appears fully borne out. The chief or only difference was in the state of the spleen.†

4. *Intermittent Fever; large doses of quinine in*.—Our Report in vol. iii., p. 168, contains an account of a mode of exhibiting quinine in intermittents, much in vogue among American physicians. The evidence there afforded by Drs. Byrne, Van Buren, &c., has more recently received confirmation in a paper by Dr. Holmes, who agrees entirely with the writers above mentioned in the innocuity of scruple doses, as well as in the belief that in such quantities the medicine produces less irritation of the mucous membranes than in the small doses given in this country.‡

\* Med. Gazette. † Ib., Jan. 8, 1847. ‡ Amer. Journ. of Med. Sciences, Oct. 1846.

*Iodine in.*—A M. Seguin professes to have met with much success in suspending the paroxysms of ague with the tinct. iodinii, after quinine has failed.\*

### § III. *Accidental Productions.*

5. *Fibro-plastic Tissue.*—Under this title MM. Robin and Maréchal (de Calvi) described a tissue, previously mentioned by Lebert, which enters largely into the composition of several forms of tumour, and which consists of two elementary forms, the fibro-plastic globule and the fibro-plastic fibre.

The globule is a colourless ovoid body, 15 millimeters in diameter, containing an oval nucleus of from five to seven millimeters in diameter, which in its turn contains from one to four nucleoli.

The fibre is fusiform, nine millimeters in length, and likewise containing a nucleus.

The above tissue, according to these authors, enters into the composition of the following tumours: the round, soft, vascular tumour of the conjunctiva; simple fibrous tumour of the breast; fungus of the dura mater; condylomata; and lupus. A fact not before mentioned is the existence of this tissue in the induration of chancre, of which it appears to constitute the entire mass. The conclusions with which the memoir terminates are to the following effect:

1st. There are two forms of anatomico-pathological elements: the homœomorphous, and the heteromorphous.

2d. The heteromorphous elements are a product sometimes of a general, at others of a local, disturbance of nutrition.

3d. In the heteromorphous elements a perfect nucleated cell does not exist.

4th. The induration of chancre consists almost entirely of fibro-plastic tissue.†

6. *Fibrous Tumour.*—We have to notice two communications on the pathological history of fibrous tumours, one by Dr. Hughes Bennett, the other by Engel.

Dr. Bennett enumerates four forms of pathological fibrous growth: 1, such as is seen in cicatrices; 2, that which is the result of chronic exudation on serous membranes; 3, that formed by an increase of the areolar tissue of the skin or other organs; 4, the fibrous tumour. The latter is again subdivided by him into four groups: 1, sarcomatous tumours; 2, desmoid; 3, chondroid; and, 4, neuromatous fibrous tumours.

*Sarcomatous* tumours are described as consisting of fusiform cells closely packed together, some of which are destitute of a nucleus. Their fusiform figure is thought to be dependent upon the age of the tumour.

*Desmoid* fibrous tumours are seen in the uterus, the mamma, and the submucous tissue. In the latter situation they develop themselves as polypi. Their microscopic elements are filaments of from  $\frac{1}{800}$  to  $\frac{1}{600}$ , sometimes curled and brittle, at others undulate.

Chondroid and neuromatous fibrous tumours do not require any particular mention.‡

Engel arranges fibrous growths into three principal groups. 1. Fibrous tumours without a fundamental form. 2. Fibrous tumours whose fundamental form is a single cyst. 3. Fibrous tumours originating in a compound cyst.

Under the first group are placed—

a. Products of congestion or inflammation, seldom regular in form, their fibrillar arrangement confused; appearing in the integument under the form of warts or sceloid; in the mucous membranes, as indurated elevations; in the serous membranes, as granulations resembling the glandulæ pacchioni; in the alveolar perosteum, as epulis; in the bones, as osteo-sarcoma.

b. Fibres regularly arranged and visible to the naked eye; appearing as hypertrophy in the submucous tissue; as polypi in the intestines; interior of the uterus, &c.; of a conical form; recurring after ablation, if any portion is left behind.

c. A densely ramifying system of new-formed vessels which, by their increase, destroy the tissue in which they are developed, which is most frequently the broad ligaments of the uterus.

\* Revue Médicale, Septembre, 1846.

† Gazette Médicale, Nov. 7, 1847.

‡ Month. Journal, March, 1847.

The second group is subdivided by Engel into—

- a. Abortive fibroid, in which the cyst is filled with inorganizable material.
- b. Undeveloped fibroid, containing plasma and traces of organization, such as albuminous cysts, atheroma, &c.
- c. Perfect fibroid. Tumours of this kind have received various names, as sarcoma, cysto-sarcoma, &c.

The third group comprehends—

- a. Ordinary fibrous tumour.
- b. Abortive or undeveloped fibrous tumours.\*

7. *Cancer*.—We are indebted to Dr. Hughes Bennett for the most recent researches on the subject of cancer; which researches have also the merit of bearing more directly upon practice than is usual with similar inquiries. The author has confined his observations to the following interesting and important questions, namely:

1st. *Is there any anatomical character which will enable us positively to distinguish a cancerous from any other kind of growth?* A cancerous growth may contain the following elementary structures: 1. Molecules and granules; 2. Nucleated cells of various shapes; 3. A filamentous or fibrous tissue; 4. A viscous fluid; 5. Blood-vessels; 6. Fatty matter; 7. Pus, and compound granular cells; 8. Black pigmentary matter; 9. Earthy matter. Of these some are accidental or only occasional, and others essential or invariably present. The essential elements of cancer are—1. A fibrous meshwork or stroma; 2. Nucleated cells; 3. A viscous fluid in which these float.

The fibrous tissue of cancerous growths exactly resembles that found in lymph or in the healthy tissues of the economy. It may be formed either by deposition or by means of cell-growth. In the former case, filaments more or less delicate, and closely aggregated, may be seen crossing each other or running in bundles, forming various kinds of mesh-works, in which the cells of cancer are deposited. In the latter case we can observe fusiform cells splitting up into fibres, and are able to trace their formation from round, oval, or caudate cells, until perfect fibres are formed. These cells (called by Lebert *fibro-plastic*) are of a round or oval form, varying in size from the 1-100th to 1-50th of a millimeter in diameter. Sometimes they possess a distinct nucleus, about the  $\frac{1}{130}$ th of a millimeter in diameter; at others, contain only several molecules and granules. Acetic acid causes these bodies to undergo very little change. They become somewhat paler, but there is no marked difference in this respect between the nucleus and cell-wall. These cells, in their different stages of development into fibres, have been frequently mistaken for those of cancer. Müller placed them among cancerous growths; and hence the erroneous opinion that the caudate or spindle-shaped cell is characteristic of cancer. Fibrous tissue may be arranged so as to form loculi, containing a viscous fluid with or without cancer-cells, constituting the colloid tissue of authors.

The nucleated cells peculiar to cancer vary greatly in shape and size. Sometimes we see nothing but oval bodies about twice the size of a human blood-globule, or closely resembling, except in colour, the oval blood-corpuscles of the lama or camel. They measure about the 1-75th of a millimeter in length, and 1-100th or 1-120th of a millimeter in breadth. These oval bodies are the nuclei of cancer-cells. Sometimes they exist alone; at others we may observe, by careful management of the light, a round or oval delicate cell-wall, frequently resembling a mere shadowed halo, in the fluid in which it floats. On adding acetic acid to them, we find the cell-wall disappear, whilst the nucleus becomes more distinct than formerly. Such is the character of a cancer-cell in its young state. At a more advanced period of development, the cell-wall is more distinct. The nucleated structure is now round or oval, its medium diameter being about the 1-50th of a millimeter, with a round or oval nucleus about the 1-100th of a millimeter in diameter. The addition of acetic acid always produces a remarkable change in these bodies, causing the cell-wall to become very transparent and faint, and the nucleus to assume an unusual degree of distinctness. Hence the author considers that Dr. Walshe has committed a fundamental error in his histology of cancer, when he says (p. 33 of his treatise) that “the ultimate micro-

\* Schmidt's Jahr., No. xii., 1846.



scopical cells of cancer are insoluble in cold and boiling water, and are not seriously affected by acetic acid.<sup>27</sup>

Dr. Bennett minutely described the further growth of these cells, which he illustrated by diagrams, showing how they multiplied from cell rising within cell. It is owing to this cellular structure that cancer owes the reproductive power which constitutes its malignancy. The cells occur isolated or in groups, surrounded by the other elements of the growth, but more especially by the fibrous tissue.

The third essential element in cancer is a gelatinous fluid. On cutting through a scirrhus tumour, however hard it may be, we may generally succeed in scraping from its surface a fluid more or less transparent. In soft cancer it is more abundant, and contains the granules and cells previously described. In some forms of cancer, however, it constitutes a very large proportion of the mass, presenting a gelatiniform or mucilaginous appearance, varying in colour from a pearly white to a deep amber, and in consistence from a slightly viscous fluid to a firm semi-solid mass. Collections of this kind may occur in loculi formed by fibrous tissue, or in cystic tumours perfectly structureless, or containing only numerous molecules and granules constituting the simple colloid tissue of Gluge and Lebert. When associated with cancer, however, it contains a greater or less number of the cells previously described, in various stages of their development.

It is the relative amount of the three essential elements of cancer now described which constitutes its peculiar form. If the fibrous element be in excess, it constitutes scirrhus. If the corpuscles be numerous, encephaloma is produced: and if the fluid abound, and is collected into loculi, we call it colloid cancer. There is no other difference between these three forms than this.

At an early period in the study of histology it was natural to conceive that a certain *form* of the cell should be thought characteristic of cancerous growths. The observations of Müller led to the belief that the caudate and spindle-shape of this minute structure was peculiar to them. Hence we find him confounding certain tumours long denominated sarcomatous, and which wholly consist of fusiform cells, with cancerous or malignant growths. These, however, have no power of reproduction; and, although often associated with cancerous cells, should not be confounded with them. From the results of many examinations, Dr. Bennett was satisfied that there is no one form of cell which can be considered as at all times characteristic of cancer. The caudate and spindle-shape of these bodies is common to fibrous structures in general, frequently seen in lymph, and especially in the exudation forming the granulations on ulcers, recent wounds, vegetations on the endocardium, &c. &c.

The *structure* of the cell and the action of acetic acid upon it are much more distinctive. If the corpuscles are in that stage of growth in which they present a distinct nucleus with contained nucleoli, and if, on the addition of acetic acid, their external wall be rendered more transparent, whilst the border of the nucleus is apparently thickened, they are highly characteristic of a malignant structure. But even this is not an absolute and invariable mode of distinction; besides, it is only applicable when the cells have arrived at a certain stage of development. Dr. Bennett had frequently seen young epithelial cells, under certain circumstances, present all the characters just mentioned, with the exception of inclosed nucleoli, and undergo the same reaction with acetic acid. This is very apparent in some cases, where effusion has taken place into the lateral ventricles of the brain, when the epithelial cells of the choroid plexus become separated, swell out from endosmosis, assume a globular form, and the cell-wall, if young, is partially dissolved in acetic acid, whilst the nucleus is unaffected. The same occurs with the epithelium of the bladder. He has found in the bladder a fluid having all the external appearance of pus, and on examination shown them to consist of round, oval, and caudate nucleated cells, exactly resembling those found in cancer, and acting with acetic acid in the same manner. Yet the lining membrane of the bladder, the ureters, and kidneys were perfectly healthy. We need not wonder, then, that epithelial cells have frequently been mistaken for those of cancer, even by histologists; and that many growths, consisting of hypertrophy of the epidermis, or epithelium, as in several so-called cases of cancer of the lips, ulcerated warts, excrescences, &c., should have been mistaken for malignant growths.

Dr. Bennett stated that he was not aware of any tissue in which a fibrous and a

cell-structure, such as has been described, were combined, and he was, therefore, inclined to think that whenever we find cells of this kind deposited between the meshes of a filamentous structure, we may be satisfied that cancer is present. If we trust to the form of the cell alone, we may confound epithelial growths with cancer—if we trust to the fibrous elements alone, we may mistake sarcomatous growths for it. But in no case, so far as his experience has yet gone, can the two be associated without the existence of malignant growth. This character, then, he thinks one which will apply to all forms of cancer. In many cases the form and appearance of the cells, to an experienced eye, will be sufficient; this more especially when they are fully developed, and the influence of acetic acid upon them observed. In difficult cases the conjoined character of the cells and fibres, and their relative position with respect to each other, will enable us to determine the point with more exactitude. To arrive at a knowledge of these facts, however, considerable skill in the manipulation of the microscope is necessary, and a very intimate acquaintance with the healthy and morbid tissues of the body. To distinguish the relative situation of the cells and fibres, especially when mucous membranes are the object of investigation, a section, by means of Valentin's double-bladed knife, is also in most cases essential.

2d. *Is there any evidence that cancer is spontaneously curable?* Of the ultimate causes of cancer, or why an exudation thrown out from the vessels should ever undergo the peculiar transformations described, we know nothing. Observation and experience, however, coincide with the modern theory of cell-growth, in attributing to it a reproductive power, on which its malignancy and power of spreading from tissue to tissue depend. Is this process ever checked? A general opinion prevails that cancer is necessarily fatal. Dr. Bennett did not coincide in this opinion, because it was not easy to understand why nature should never cause the degeneration and disappearance of this one particular growth alone, whilst every other tissue and form of cell-life were occasionally abortive.

Trousseau, Hodgkin, Cruveilhier, and others have frequently traced the conversion of scirrhus into ossiform matter, in the lower animals and in man. Dr. Walshe, on this subject, observes, "I feel myself justified in affirming that, after careful investigation of the point, that if the bony lamellæ actually continuous with some part of the skeleton, and which formed a marked characteristic of certain cancers connected with osseous structure, be excluded from consideration, the phenomenon in question will be found to be much more written of than observed." (Treatise, p. 81.) Dr. Bennett stated that he had seen this transformation into calcareous matter in five cases, and presented four preparations to the Society taken from three of these. The first preparation was a portion of a large soft cancer, lobulated externally, taken from a case of Dr. Patterson's preserved in spirit. A microscopic examination showed it to contain numerous cancer-cells, deposited in areolar tissue, combined with an immense number of crystalline masses of phosphate of lime. The second preparation was a dried section of this tumour, the volume of which was only slightly diminished, and seemed to be wholly formed of calcareous matter. The third preparation was a dried portion of intestine, with a mesenteric gland attached, the external portion of which was converted into calcareous matter; where fresh cancerous matter could still be squeezed from its centre, exhibiting the characteristic cell-structure, mixed with a quantity of earthy matter. The fourth preparation was a dried portion of mesentery, studded over with enlarged mesenteric glands, completely calcareous, removed from the body of a female who had died from scirrhus and chronic stricture of the pylorus. This series of preparations, Dr. Bennett considered, offered conclusive evidence that cancer is capable of undergoing the calcareous transformation.

It has been stated that cancer sometimes becomes transformed into fibrous or fatty tissue, and thus produces cicatrices in organs. It is very difficult to prove such a statement, because if there be no cancerous cells in a fibrous tissue, it is contended that it is not malignant, and never has been. On the other hand, if cancer-cells be present, it is clear that we have no evidence of degeneration. There can be no doubt that many organs and tumours are considered cancerous, which are only fibrous. Dr. Bennett had examined many so-called cases of scirrhus of the pylorus, which were only hypertrophy of the muscular and fibrous tissue of the part. He alluded to a case of Dr. Alison's he had examined, in



which the coats of the stomach throughout varied in thickness from an inch to an inch and a half. The viscus was thought by all who saw it to be cancerous, and yet he showed it to consist of nothing but fibrous tissue and fusiform cells. He had also proved many tumours supposed to be cancerous to be only fibrous.

Professor Bochdalek, of Prague, formerly pathologist to the hospital there, and now professor of anatomy in the university, published a memoir in 1845, "On the Healing Process of Cancer in the Liver." He describes the cancer in this organ as breaking down into a cream-like matter, the fluid parts being absorbed, and the whole shrinking together, forming a puckering on the surface, often corresponding to a fibrous mass or a fatty material, in which collapsed cancer-cells may yet be detected. In some livers he has seen these cicatrices in all stages of formation, cancer in some places, and perfect cicatrices in others. In Prague, he tells us there are between 400 and 500 bodies examined annually. Among these, cancer of the liver occurs about 16 or 17 times, and among these proofs of healing may be observed between 6 and 7. (*Oesterreichische Wochenschrift*, 26th April, 1845.)

Dr. Bennett had frequently seen these appearances in the liver, but he had never been able to satisfy himself that they were proofs of cured cancer. There are strong probabilities in its favour, however. Tubercular masses are rare in the liver of adults; and such lesions must depend either upon cancer or upon chronic abscesses. He exhibited to the society two wet preparations of livers, with puckering on their surfaces, some corresponding to white fibrous cicatrices, and others to rounded yellow masses, varying in size from a pea to that of a walnut. When recent, these latter were thought to be cancerous by all who saw them, yet a minute examination showed them to be formed principally of fibrous tissue, mixed with irregular fatty particles, and debris of cells, so indeterminate in their character, that their nature could not be ascertained. In some of the cases of Professor Bochdalek, cancer was associated with these cicatrices, and that cancerous ulcers occasionally cicatrize is well known to surgeons.

When in Prague last autumn, Dr. Bennett, having been previously acquainted with Professor Bochdalek's memoir, carefully examined the preparations of the lesion described, in the pathological museum of that city. He recognized them to be the same in appearance as those he now presented to the Society. Professor Dlauy, the present pathologist, was so polite as to take the preparations out of their bottles, make fresh incisions into them, and permit Dr. Bennett to examine them microscopically. He found that the cicatrices, though altered by spirit, were principally composed of fibrous tissue: the nature of the softer matters could not be ascertained. This was no proof of cancer. He was then shown a similar preparation of a liver, together with a stomach taken from the same case, the former having similar puckering, and the latter a cancerous ulcer, of which the individual died. Whether this was a mere coincidence it would be difficult to say. M. Sedillot has lately asserted that cancer-cells are occasionally elongated, so as ultimately to form fibres, but it is not certain whether he has clearly distinguished the fibro-plastic elements so often present in cancerous tumours from those of cancer. Dr. Bennett considered that, taking every statement into consideration, it was by no means improbable that cancer might occasionally degenerate into a fibrous mass, although we still require positive proof of it. At all events, they have convinced him of the necessity of making further researches on this subject.

The same difficulties exist with respect to the supposed degeneration of cancer into fat. Nothing is more common than to find associated with cancer a yellowish friable matter, more or less abundant, resembling cream in colour or consistence, or presenting a bright gamboge yellow tint. This, on examination, is found to consist of numerous granules, which disappear on the addition of ether, and refract light like globules of oil. Whether these granules are elementary nuclei and cells, or whether they are the result of the disintegration of cells previously formed, is unknown.

*What means do we possess of diagnosing cancerous from other growths in the living subject?* The local symptoms and general signs of cancer have frequently been found to be insufficient for the purposes of diagnosis, such as the lancinating pains, unequal surface, hardness, elastic feel, softening, ulceration, the surrounding tissue



being affected, a general alteration of the constitution, and a tendency to return after excision. All these symptoms have, at various times, been proved to be connected with epidermic, fibrous, fatty, or cystic growths.

In the living subject it is clear that the anatomical arrangement of the fibrous and cellular elements, observed in morbid specimens, can seldom be seen. We have no opportunity of obtaining a section. Still there are certain places where the detection of such cells as have been described, exhibiting their peculiar change under the action of acetic acid, will enable us to diagnose a malignant growth with certainty. Over most of the surface generally, for instance, where the diagnosis most concerns the surgeon, a group of such cells cannot leave us in doubt, because the epidermic scales in such cases never resemble them, as they do in internal organs, as the bladder, stomach, or brain. Thus, although anatomically, and in all cases, we cannot depend upon the form or even structure of the cell, as connected with the epidermis alone we can. Hence, to the surgeon, a minute examination is a more precious means of diagnosis than to the physician. Various ulcerated and fungoid tumours of the surface may be diagnosed with certainty, from an examination of the cells alone, whilst in fluids discharged from the stomach, bowels, or bladder, this means of diagnosis is not so certain.

Many instances are now on record where, in doubtful cases, such an examination has determined the nature of the growth. Several have been lately published by M. Sedillot, of Strasbourg, and others may be found in the works of Lebert and Vogel. There can be no doubt that many tumours and ulcerations exist which, to the naked eye, and according to the ordinary symptoms, resemble cancer, although they are perfectly innocent. To all such growths Lebert has given the name of *cancroid*. Among them may be placed many so-called cancers of the lip, which on examination, are often found to be fibro-epidermic; many tumours of the breast, which are either fibrous, fibro-epidermic, or cysto-sarcomatous; fungoid swellings of the dura mater; the ordinary fungus of the testicle, which Messrs. Goodsir and Syme have shown to consist of healthy granulations; and probably the so-called chimney-sweep's cancer of the scrotum. Several instances may be referred to, published in the writings of Lebert, Vogel, Syme, and Sedillot.

4th. *What influence should an improved knowledge of the pathology and diagnosis of cancer have upon the treatment?* Most of the practical points connected with the surgical treatment of cancer were fully discussed in the French Académie de Médecine, in 1844, on the occasion of a paper read by M. Cruveilhier. That eminent pathologist maintained that surgeons are continually cutting out fibrous tumours from the female breast which never undergo cancerous transformation, and which, therefore, might be allowed to remain with perfect safety. So far from fibrous growths ever degenerating into cancer, he considered that they indicated a state of constitution altogether incompatible with malignant action; so that in being able to detect them in the breast or uterus, he has confidently assured the patients that they would never be subject to cancer. In support of these statements he brought forward cases of tumours in these situations, which had existed from ten to thirty years, and cited one exceptional instance, where cancer having attacked a breast already the seat of fibrous tumours, these remained unaffected, while all the rest of the organ was cancerous. He pointed out that cancer always depended upon a constitutional disorder, that local disease was the effect and not the cause, and to remove the first, while the latter was allowed to remain, was an irrational practice.

In these opinions M. Cruveilhier was supported by MM. Velpeau and Joly. The first maintained that he could diagnose fibrous, or what he called fibrinous tumours of the mamma, which never degenerated into cancer, although he frequently removed them to tranquillize the patient, or to get rid of a deformity.

On the other hand, it was contended by most of the practical surgeons of Paris, including the names of Blandin, Gerdy, Roux, Amussat, Berard, and Lisfranc, that it was impossible to diagnose fibrous from cancerous tumours of the breast at an early period; that the former were only an incipient stage of the latter, and, consequently, frequently degenerated; and that the best practical rule to be followed was always to excise them as early as possible. They maintained that the disease was first local, and that the cachexia was induced by absorption from the morbid growth, was the cause, and not the result. They denied the law of in-

compatibility, sought to be established by M. Cruveilhier, and denounced his paper as one likely to be followed by the most injurious consequences in practice.

In support of these opinions numerous cases were cited, having all the symptoms and characters belonging to what M. Cruveilhier called fibrous tumours, which afterwards became cancerous, and destroyed the patient. Some specimens, also, were brought forward where tumours, originally fibrous, had apparently undergone the cancerous transformation, even in the uterus. Many surgeons brought forward instances of tumours, to all appearance truly cancerous, which were excised, and where there had been no return for a long series of years.

This celebrated discussion left the practical question in the same state as before, namely, that as a matter of prudence all tumours should be removed from the female breast as early as possible, whatever be their nature. No one practitioner who took a part in it appeared to be aware of the real structure of cancerous tumours, or knew that a fibrous as well as foreign growth was invariably present in them. Indeed, many cited as the best proof of cancer the presence of the dense fibrous structure, often grating under the knife, which is exactly that part of the tumour which is least malignant.

A more perfect diagnosis, however, has already led to some useful modifications in surgical practice. Among these, Dr. Bennett\* alluded to the altered operation of fungus of the testicle, so successfully executed by Mr. Syme,† as communicated to the Society. Another valuable modification has been introduced by M. Sedillot, of Strasbourg. It is well known that in many cases of incipient cancer it has been advised to make the incision embrace a considerable portion of the sound textures, in order to ensure eradication of the malignant growth. Thus the whole female breast has often been removed, although the extent of the tumour has been inconsiderable. In cases, however, where a restoration of parts is necessary, as in the lip, the rule is very inconvenient. M. Sedillot, therefore, in several cases, having satisfied himself, in the manner pointed out, that the ulcer or growth is not cancerous, has barely removed the indurated structure, and thus been enabled to preserve a larger amount of soft parts than he otherwise would have done. These operations have been perfectly successful.

In some cases an exact diagnosis, formed by a microscopic examination, has prevented an operation which would otherwise have been determined on. Vogel gives a case of ulcerated breast of this kind. (*Icones Histologiæ Pathologiæ*, p. 127.) Dr. Bennett has seen two others, where, in canceroid growth in the breast, he diagnosed non-malignant disease. All these cases ultimately recovered.

In conclusion, Dr. Bennett observed that he had carefully avoided theory. He had said nothing of the supposed mode of growth of the cancer-cells, whether the disease be dependent on a peculiar condition of the blood, induced by any particular regimen, climate, constitution, or other causes. He had confined himself entirely to facts, and endeavoured to show that cancer possesses a distinctive structure; that it may occasionally undergo a calcareous, and probably a fibrous transformation; that a knowledge of its structure is of diagnostic value; and that this has already been serviceable to the healing art, and bids fair to be still more so in the treatment of this class of fatal diseases.

## PART II. SPECIAL PATHOLOGY.

### § I.—*Diseases of the Nervous System.*

The period embraced in the present report has added little that is valuable connected with the subject of disease of the nervous system. Exclusive of the articles which are found in the first part of this volume, we have met with nothing worthy of remark but the following:

8. *Epilepsy.* Dr. Branson, of Sheffield, has contributed a statistical record of 42 cases of this disease—18 males and 24 females. Of these—

\* *Monthly Journal*, March, 1847.

† See "Abstract," vol. i, p. 134.

Under the age of 7, there were 4 males, 2 females.

From 7	to 14,	"	6	2	"
From 14	to 21,	"	2	6	"
From 21	to 31,	"	4	10	"
From 31	to 41,	"	2	2	"
From 41	to 51,	"	0	2	"

From this it appears that under puberty the male, afterwards the female sex, is most liable. The predisposition which seems to exist in the female sex between the ages of fourteen and thirty-one may be regarded merely as an indication of the hysterical temperament, the extremes of hysteria and epilepsy being separated by a very narrow line. Of these cases, twenty were centric, and twenty-two were eccentric.

Of the eccentric, six were connected with amenorrhœa; seven with intestinal irritation and worms; two with undue lactation; two with dentition; one with menorrhagia; two with cessation of the catamenia; two with accident, one from a blow on the head inflicted by a schoolmaster, by which the boy was rendered insensible for some weeks: and the other from the breaking of a grinding-stone.

One of the cases classed under the head of worms might be called centric, for though the patient parted with a lumbricus teres, the origin of the fit could clearly be traced to fright, from the relation of ghost-stories.

Of the eccentric cases, 5 were treated with nitrate of silver; 6 with preparations of steel; 11 with active purgatives, blisters, leeches, turpentine, assafœtida, and vegetable tonics.

Of the centric cases, 13 were treated with nitrate of silver; 7 without nitrate of silver, with purgatives, blisters, setons, steel, and valerian.

Of the five eccentric cases treated by nitrate of silver, there were:—Cured, 1; relieved, 1; much relieved, 2; not relieved, 1. Of the six treated with steel, there were—Cured, 1; relieved, 1; much relieved, 0; not relieved, 4. Of the eleven treated otherwise, there were—Cured, 4; relieved, 1; much relieved, 0; not relieved, 6. Of the thirteen centric cases treated by nitrate of silver, there were—Cured, 0; relieved, 4; much relieved, 2; not relieved, 7. Of the seven treated by other remedies, there were—Cured, 0; relieved, 0; much relieved, 1; not relieved, 6.

The duration of treatment varied from three weeks to seventeen months; the average being about three months. Thus of the eighteen cases of both kinds treated by nitrate of silver, ten derived benefit: whilst of the remaining twenty-four, eight only received benefit, the result being clearly in favour of nitrate of silver as a remedy in epilepsy.

The great objection to this remedy (one, however, which we believe is greatly exaggerated) is its tendency to produce discoloration of the skin. This Dr. Branson believes may be obviated by care in exhibiting the medicine: and further states, that the approaching evil may always be recognized by attention to the state of the gums, upon which the effects of the medicine are first seen in the shape of a blue line of the same colour, but narrower than that produced by lead.\*

9. *Morbid Rhythmical Movements.*—A recent number of the "Edinburgh Medical Journal,"† contains an elaborate essay on this subject, by Dr. Paget, of Cambridge, including illustrations of bowing movements of the trunk, rotatory movements of the head, vibration of a single limb, and other anomalous motions. Dr. Paget is inclined to consider these lesions of mobility as arising from disorder of the cerebellum or its commissures, and founds his opinion upon the well-known experiments of Magendie, taken together with the results of post-mortem examinations witnessed by himself.

10. *Traumatic Tetanus.*—Two successful cases of this usually fatal disease have recently been recorded, both of which were treated by infusion of tobacco; but in the one case injected into the rectum, in the other taken into the stomach. The first case occurred to Mr. B. Travers, jun., and the injection, of the strength of ʒss to Oss. was repeated for four days in succession.‡ The other case is narrated by Mr. Priddy.§

\* Prov. Journal, Nov. 18, 1846.

† Med. Gaz., Dec. 25, 1846.

‡ Jan., 1847.

§ Month. Journal, March, 1847.



11. *Cramp during Sleep*.—A correspondent of the "Medical Times" mentions the following simple remedy for the cramp, which afflicts many persons during sleep. Having himself been for many years a martyr, almost every night, to this torturing malady, and having tried in vain many of the remedies usually prescribed for relief, he was at length led to reflect upon a fact, which had hitherto escaped his attention, viz., that while sleeping in a chair, with the lower limbs, if not touching the floor, yet so depending as to form an inclined plane with the whole of his frame, he was in this position never disturbed by cramps; and, upon inquiring, he found other sufferers from habitual cramps were under the same predicament. These facts, in connection with some physiological considerations, induced him to put in practice the following plan, which, after a trial of six weeks, has proved decidedly successful. The plan is to *sleep upon an inclined plane*, which is effected by taking care that the bed (or mattress) should incline at least *twelve inches* from the upper to the lower feet of the bed; and for this purpose the lower feet were cut down, so as to form the requisite inclination. But the inclined plane may also be made by an arrangement of mattresses, or by increasing the height of the upper part of the feather-bed, by removing the feathers from the lower extremity. It is scarcely necessary to mention, that the disorder is almost always connected with a weak or imperfect state of the digestive organs; and therefore, although the method now stated for relief will allow the sufferer several indulgences in diet hitherto forbidden, yet there must be limits carefully observed, if he expect to pass his nights entirely free from the malady.\*

## § II.—Diseases of the Respiratory System.

12. *Physical Diagnosis*.—Dr. Turnbull, of Liverpool, has published a synoptical table of the physical signs of the diseases of the respiratory organs, which will, we doubt not, be found useful to students and those who are not proficient in the diagnosis of pulmonary diseases; it has perhaps the fault which almost necessarily attaches to works of the kind, that of over-condensation, but it at the same time appears to be strictly accurate as far as it goes.

13. *Cynanche Laryngea, or Acute Edema of the Glottis*.—Dr. Budd endeavours to show that the disease known to practitioners under the above title is really erysipelas, commencing in the fauces, or in their neighbourhood; and that it has been generally supposed to be confined to the larynx, and has been named laryngitis, in consequence of its often proving fatal before the erysipelas has had time to spread far from this part.

In support of this view, he relates five fatal cases of this disease that have recently occurred in London: one in his own practice in King's College Hospital: three in the Dreadnought, the particulars of which were given him by Mr. Hudson; and one in Charing-Cross Hospital, under the care of Mr. Avery, which has been published in the medical journals.

These cases, the author observes, were clearly examples of the same disease; but they did not all begin exactly in the same manner. In three, the inflammation commenced in the fauces; in one, it commenced in the parotid gland; and in one, the first appearance of it was an erysipelatous blush at the angle of the lower jaw.

In all the cases, the inflammation soon spread to the glottis, and produced there the same effects—namely, redness, and great thickening of the epiglottis, and of the lips of the glottis, with effusion of sero-purulent fluid in the submucous cellular tissue to such a degree as, in three of the cases, to produce almost sudden closure of the glottis, and consequent suffocation.

In three of the cases in which death occurred within a few hours after the inflammation of the glottis came on, and within twenty-four or thirty-six hours from the commencement of the malady, the inflammation had not time to spread far, and the air-tubes, and lungs, and other organs, were sound.

In the other cases, which were more protracted, the inflammation had spread down the air-tubes, and there were marks of inflammation in the chest, and an infiltration of a sero-purulent fluid in the loose cellular tissue of the neck.

\* Med. Times, Dec. 1, 1846.

The occasional connection of laryngitis with erysipelas was noticed by Dr. Cheyne, in his article on Laryngitis in the "Cyclopædia of Practical Medicine;" and again by Mr. Wood, in a paper published in the seventeenth volume of the "Medico-Chirurgical Transactions." The first person to treat expressly of it was Mr. Ryland, of Birmingham, in his works on "Diseases of the Larynx."

The author cites the facts related by Mr. Ryland, and observes that they prove conclusively that inflammation of the larynx, causing great swelling of the lips of the glottis, and infiltration of fluid in the submucons cellular tissue, and thus leading to speedy suffocation, occasionally results from the poison of erysipelas.

He considers the following circumstances favour the opinion he has expressed as to the nature of the disease:—That the inflammation spreads in the same mode as in erysipelas of the skin, presenting the deep redness and swelling, and infiltration of a serous or sero-purulent fluid, which occur in that disease; that it is more fatal than ordinary laryngitis; and that it occurs most frequently amongst the inmates of hospitals in which erysipelas prevails, and amongst such of them as are peculiarly liable to erysipelas:—viz., convalescents from continued fever, or eruptive fevers, and those labouring under secondary syphilitic ulcers.

In the treatment of this disease, making a number of punctures on the back of the tongue and fauces with a sharp bistoury, is recommended; and two cases are related in which this operation, performed every two or three hours, proved successful.\* The same measure was long since re-copied in practice by Lisfranc. (See Abstract, vol. ii. p. 14.) Tracheotomy offers a valuable resource if performed sufficiently early.

14. *Chronic Pleurisy*.—A case is narrated by Dr. Hughes which is chiefly remarkable for the number of times the operation of paracentesis was performed (15), and the wonderful powers of resistance exhibited by the patient's constitution. The case is briefly as follows: A gentleman was admitted into Guy's Hospital in 1844, for thoracic disease, which had attacked him during a residence in New South Wales. He was much debilitated, with quick pulse, dyspnoea, and every physical sign of effusion into the right pleura. There was no bulging of the intercostal spaces, but a flat fluctuating tumour was observed, which dilated with the act of coughing. After a preliminary exploration a small trochar was introduced, and 24 oz. of turbid serum were drawn off. He also took iodide of potass and sarsaparilla, and so far recovered as to leave the hospital. He was again admitted in a fortnight, and although there was an evident decrease of fluid, it was thought advisable to perform the operation a second time, and 36 oz. were removed. No inconvenience followed, and he again went into the country. On re-admission, a great change for the better was perceptible. The circumference of the chest had diminished two inches, and the health was improved. As fluid was still present, tapping was again repeated, and this time 12 oz. were drawn off. From this time the patient's improvement was uniform, and he left London. After an interval of two months he was, however, once more admitted in the following condition; health good; pulse 108; respirations 24; increase of fluid in the pleura. Tapping was again performed, and 36 oz. of fluid evacuated. He was tapped again on the 18th and 26th of November, on December 21st, and finding that the frequent repetition of the operation had become necessary, he learned to tap himself, and actually did so twice. The progress of the case was subsequently favorable, and, after fifteen tappings, his health became permanently re-established.†

15. *Phthisis Pulmonalis*.—A work entitled "Contributions to the Nosography and Pathology of Tubercular Phthisis," by Dr. Gellerstedt, of Stockholm, has recently reached this country, and is very fully analyzed in the pages of the "British and Foreign Medical Review," to which, as we have not been able to see the original work, we beg to refer the reader's attention.‡

16. *Tubercular Cavity opening into the Pericardium*.—At a recent meeting of the Pathological Society of Dublin, Dr. M'Dowel presented an instance of this very rare, if not unique, termination of pulmonary phthisis.

The subject of the case was a policeman, named James Kenah, aged twenty-

\* Reported in *Lancet*, &c., March, 1847.

† *Med. Gaz.*, Feb. 5, 1847.

‡ April, 1847.



nine, a robust, well-made man, and who had always enjoyed remarkably good health, until about three weeks prior to his admission into the Whitworth Hospital, early in June, 1846. When placed under Dr. M'Dowel's care, he was complaining of cough and dyspnœa, and his countenance was pale and anxious. Careful examination of the chest at this time failed to detect any amount of organic lesion sufficient to account for these symptoms.

The history he gave of his case was, that three weeks before his admission he had incautiously exposed himself to cold, whilst profusely perspiring, and soon afterwards was seized with a severe stitch in the right side, for which he was bled, and with relief. In a few days, a return of the pain required a repetition of the venesection; profuse perspiration now followed, with deep-seated pain in the chest, and cough attended with expectoration of a dark colour. Five days after admission into the hospital, he was suddenly seized with violent and most acute stabbing pain in the left side of the chest, which lasted for several hours, and was accompanied by very severe dyspnœa. Examination of the chest now gave the following results. The natural respiratory murmur existed over the upper portion of the left lung anteriorly, and over its entire extent posteriorly; but anteriorly from the left nipple downwards to the lowest limits of the left lung, the respiratory sound was inaudible, and from this space was heard distinct metallic tinkling, and "bourdonnement amphorique." To percussion the left side of the chest sounded clear throughout, without being tympanitically so over the space where these abnormal sounds were heard. Nothing morbid was at this time detected in the right side of the chest. The symptoms next observed were that the breath became extremely fetid, the dyspnœa more urgent, the countenance continued pale and expressive of suffering, the voice became faint and hollow, the expectoration copious, purulent, and extremely fetid; he had wasting night-sweats, and his pulse was rapid and feeble. Diarrhœa then set in, and his lower extremities became anasarcaous.

When the examination of his chest was repeated, after a few days' interval, there was still distinct evidence of the existence of a large cavity in the anterior inferior portion of the left side of the chest, containing both air and fluid; for here the splashing of a fluid could be distinguished, along with metallic tinkling produced by each cough or forced inspiration; through these sounds the normal cardiac sounds could be heard, but very faint, and as it were distant. Posteriorly, over the inferior portion of the same side, distinct frotement and fine crepitus existed. There was also crepitating râle over the base of the right lung, audible as well anteriorly as posteriorly; and under the right mamma, over an extremely limited space, there was once heard what seemed to be cavernous respiration.

The difficulty of forming a diagnosis in this case was extreme; although the symptoms in some particulars resembled those of pneumothorax, yet it was judged that this could not be the lesion, because the metallic sounds were not heard posteriorly; nor was there displacement of the heart, as would have occurred with effusion into the left pleura; whilst the cavity of the pleura was known not to be obliterated, as the continuance of frotement testified. Finding crepitating râle present in the lower lobes of both lungs, it was supposed that double pneumonia had existed, which had run into the suppurative stage, and that thus a cavity had resulted in the left lung, sufficiently large to yield the metallic sounds, and accounting for the purulent, fetid character of the expectoration. This conjecture, however, the result proved to be erroneous. The patient rapidly sank, violent delirium set in, and death occurred July 26—the duration of the disease being thirty days. The body, which was but little emaciated, was examined twenty-four hours after death. When the sternum was raised, the sac of the pericardium, enormously distended, came immediately into view, completely concealing the left lung: on opening this sac, there were evidences of acute pericarditis having existed; the pericardium contained a great quantity of fluid similar to that which had been expectorated, viz., pus, of thin consistence, and a milky white colour, but inodorous; the serous surfaces were deeply coated with lymph, which was deposited in them in irregularly formed masses. On investigating further as to the cause of this inflammation, a round, smooth fistulous opening was discovered on the right wall of the pericardium. This opening, which was as large in diameter as a common goose-quill, led through a straight fistulous



channel, about an inch in length, into a small tubercular cavity in the right lung, near its anterior thin edge. The bases of both lungs, but especially that of the right, were solidified, or rather splenified, from a twofold cause: first, from the existence of pneumonia; and, secondly, from their being the seat of a deposit of miliary tubercles. No tubercles were detected in the apex of either lung. This morbid deposit was observed in their bases only.

Dr. M'Dowel thought that it was not difficult to conclude what had been the order of occurrence of the morbid changes noticed in this case: he thought it probable, here, that pneumonia, occurring in a strumous habit, gave rise to tuberculous depositions; that a vomica, being then formed near the anterior thin edge of the right lung, produced adhesion between the opposed layers of pleura, and then between the pleura and pericardium, and that a communication, subsequently, was established by the ulcerative process between the cavity in the lung and the sac of the pericardium; hence arose the pericarditis, the purulent secretion from the inflamed serous membrane passing into the cavity in the lung, and giving rise to the copious expectoration observed during life, whilst the escape of air from the pulmonary cavity into the sac of the pericardium, with the fluid then secreted, accounted for the production of the metallic sounds. Dr. M'Dowel remarked that no case similar to this had occurred in the extensive experience of Dr. Stokes, nor was it to be met with in the works of Andral or of Louis. Dr. Graves, in his "Clinical Medicine," has recorded an interesting case where an hepatic abscess opened through the diaphragm into the cavity of the pericardium; but here the physical signs of pericarditis revealed the lesion which had taken place: whereas, in the case which Dr. M'Dowel had submitted to the society, no such signs existed to throw light on the nature of the case.

### § III.—*Diseases of the Circulatory System.*

In reporting on the diseases of the circulation in our second volume, we had occasion to notice the appearance of the first volume of "Lectures on Subjects connected with Clinical Medicine," by Dr. Latham. The numerous extracts, of which we then availed ourselves, sufficiently attested our opinions of the merits of the work, and we now are able to state that the second volume, which has recently been published, is, in every respect, worthy of its predecessor. Whether for the importance of the subjects treated of in these volumes, or for the simplicity, and, at the same time, most attractive energy, with which they are treated, we consider that Dr. Latham's work is unrivalled; and we earnestly advise those who wish to gain a comprehensive and practical insight into the diseases of the heart, to lose no time in making themselves masters of its contents.

The first volume, as our readers may remember, concluded with the subjects of the acute inflammatory affections of the endocardium and pericardium; in the second, which commences the eighteenth lecture, we have the subject continued, in the study of the results, immediate and remote, of endocarditis and pericarditis.

17. *Results of Endocarditis and Pericarditis.*—Dr. Latham has remarked, that though the deaths from rheumatic endocarditis are few, the recoveries are few also. Of 90 cases, three only died; but seventeen only recovered with a sound heart. What, then, asks Dr. Latham, becomes of the remainder? A most momentous question, which the author is not able to answer for those individual cases; but the answer to which is too readily given in the many cases of organic heart affections which the hospital physician, more especially, is called upon to witness.

The first result of acute inflammation of the endocardium or pericardium which the author considers, is *secondary inflammation*. A patient who has once had his heart inflamed is liable to its recurrence, and the inflammation may attack either membrane, or both together. Of these attacks, the diagnosis is not easy, as we cannot to a certainty distinguish the murmur of recent disease from that produced by the results of the old attack. Our trust, says Dr. Latham, is in the contrast between the patient's state before and subsequent to the new attack. Auscultation, though everything in the first attack, is next to nothing in the renewed one. The reason of this is plain.

In the treatment of these inflammations, the author cautions us that the fact

must always be remembered that they are secondary; bleeding, with the object of entirely quieting the excessive action of the heart, would fail, as part of that action is permanent, and the result of a former seizure. Leeches are all that is necessary in most cases in the way of blood-letting, and both these and mercury are to be discreetly employed.

In a subsequent lecture, we have an account of the consequences to health of the permanent unsoundness of the heart left after endocarditis; which consequences are ranged by the author into three classes of cases: 1, those in which a permanent murmur is the only symptom; 2, cases in which occasional palpitation is added to this murmur; 3, cases in which the palpitation is constant.

Lecture 23 contains the clinical history of permanent unsoundness of the heart from pericarditis; and lecture 24 an account of tubercular, atheromatous, cartilaginous, and bony deposits. These subjects we pass by, and arrive at

18. *Inflammation of the Muscular Substance of the Heart and Cardiac Abscess*, which forms the subject of lecture 25. Carditis is comparatively a rare affection, and its termination in abscess is so uncommon an occurrence, that it is doubted by some writers, as we shall see below, that it ever does take place. Dr. Latham, however, believes in its existence, and relates a case in many respects similar to those given in our last volume (p. 198). It is remarkable, that in all these, cerebral symptoms predominated, and the cardiac affection was only discovered after death.

While upon the subject of abscess of the heart, we may mention that an additional case has been furnished by Mr. Stallard, of Leicester.\* The subject was an old man, who was suddenly seized with coma, with cyanosis and great prostration, from which he rallied for two days and then gradually sunk. Mr. Stallard's object in his paper is to call in question the inflammatory origin of this and similar cases, and to propound the opinion that the so-called abscess is in reality the result of an effusion of blood into the parietes of the heart, the fibrin of which has undergone the change pointed out by Gulliver, and which is frequently mistaken for pus.

19. *Softened Heart and fatty Heart* are both commented upon in the twenty-sixth lecture. The softened or flabby heart has been noticed by Dr. Latham chiefly under two conditions. One of these is fever, the other anæmia. In speaking of this state of heart in connection with fever, the author alludes to the experience of Louis and Stokes, both of whom notice the complication, the one as an essential part of the disease, the other as an indication for stimulating treatment. The author states also his own convictions that this state of heart contributes much to the mortality of fever, and regards the intermittance of pulse, which indicates it, as one of the worst prognostic signs of a fever case.

The *fatty heart* is stated to be a form of disease of which we have no sure diagnosis, but can only form a probable conjecture. This conjectural knowledge is derived from the presence of the signs of dilatation of the heart without valvular disease, with feeble fluttering action, and in a subject with a tendency to obesity. In such a combination of circumstances we arrive as near as possible to a sure diagnosis. The author does not fail to notice the main point in the history of fatty heart, namely, its tendency to rupture, and narrates an instructive case.

20. *Hypertrophy and Dilatation*.—Lectures 27 and 28 are occupied with hypertrophy and dilatation; the former does not offer any points of sufficient interest to be recapitulated; we may, however, state that the latter chapter, which treats of these alterations as the consequence of external injuries, will be found worthy of perusal, as the subject has been previously, comparatively speaking, unstudied.

The causes of hypertrophy and dilatation are not limited to those which are located in the heart itself, or which originate in external injuries; there are others which are found beyond the organ itself, either in other parts or in the constitution. Of the former the author, in his twenty-ninth lecture, mentions dilatation of the aorta, and unnatural narrowness of the same vessel and its main branches; of the latter two cases are narrated. Among those causes which exist in more remote organs is obstruction in the lungs, which is apt to be followed by dilatation of the right cavities. An exception to the general rule exists in the case of phthisis pul-

\* Transactions of the Prov. Med. Association, vol. iii. New Series.

monalis, the explanation of which is to be sought in the general diminution of the quantity of blood. Dr. Latham does not omit to mention also the effect of Bright's disease on the heart, but he does not appear to appreciate the full influence of that disease, for the knowledge of which we are so much indebted to the elaborate paper of Dr. Taylor (*Medico-Chirurg. Transact.*, vol. xxix).

21. *Treatment of Heart Disease.*—We now come to a portion of the work to which we may naturally look for important information—viz., the treatment of unsoundness of the heart. In the thirteenth lecture Dr. Latham discusses the curability of hypertrophy, and in opposition to Hope and others, decides that it is not curable, or at least, what in our opinion amounts to much the same thing; with as large an experience of cardiac diseases as any man living, Dr. Latham has not met with a cured case. The supposed cases of cure he believes to have been mock and not real hypertrophy. But real hypertrophy, though it cannot be cured, can be relieved; and Dr. Latham now gives us his views as to the method of affording relief. Of blood-letting he speaks in terms of great caution, and prefers leeches, from the fact that a small quantity of blood thus taken from the precordial region will do all that is required, without the risk of reducing the strength or bringing on that most perilous complication, hypertrophy with impoverished blood.

Lecture 32. *Treatment of atrophy of the heart, of softening and of dilatation.* In atrophy as in hypertrophy Dr. Latham has but a mean opinion of treatment *relative to cure*. Softening is curable or incurable according to the conditions which have preceded it. If it arises during the course of fever it may be remedied, and the remedy is wine. Dr. Latham here pays a just tribute of praise to the sagacity of Dr. Stokes, of Dublin, who first pointed out the signs by which this condition of the heart is recognized. The softened heart of anæmia is also remediable, and the remedy is steel. But the softening of the heart which is unconnected with the above states, and which is generally found associated either with hypertrophy or attenuation, is not to be reached by medicine.

Of dilatation Dr. Latham observes, that we are said to have good authority to believe that it can be cured, but that he himself can find no satisfactory evidence of the fact. Dilatation he does not believe exists *per se*, but is always united with hypertrophy, or atrophy, or softening. To cure, therefore, the dilatation, these must first be cured.

We are obliged reluctantly to pass over several portions of Dr. Latham's excellent volume which are replete with interest. These we shall merely enumerate.

Lecture 33. On the effects of an unsound heart upon the veins and arteries.

Lecture 34. General view of secondary diseases which proceed from an unsound heart, such as congestions, effusions, hemorrhages, &c.

Lecture 35. Secondary diseases of the lungs and their treatment.

Lecture 36. Nature and treatment of dropsy from an unsound heart.

Lecture 37 and 38. Diseases which consist of an assemblage of symptoms—*Angina pectoris*. To these latter chapters we shall devote a few lines.

22. *Angina Pectoris.*—In investigating the pathology of this disease Dr. Latham commences by the narration of three cases, each remarkable in terminating fatally in a very short time from the first seizure. In these three different changes were found after death; but in two of them the same change appeared as part of the diseased condition, viz., softening and fattiness of the muscular fibre. Dr. Latham comments upon the similarity of the symptoms in these cases, as well as the multiplicity of cardiac changes with which the anginous paroxysm is associated in the more lingering cases; and from this he draws the natural conclusion that we cannot regard any one of the numerous organic changes as the essential cause of the paroxysm, but that we must look to something which, though not appertaining necessarily to any of them, may be associated with all. This condition is met with in *spasm*. *Angina pectoris* is, then, with Dr. Latham, as with Dr. Heberden, *spasm of the heart*. We had anticipated that some connection would have been traced between a fatty state of the heart and the tendency to *spasm*; this is, however, not done. We believe the association to be more intimate than is suspected. (For treatment, see art. 17.)

23. *Sudden Death in Disease of the Heart.*—The relative frequency of sudden death in the various diseases of the central organ of the circulation, is a subject



of great interest as regards the prognosis in those affections; but it is also one upon which no very definite information has been accumulated. M. Lombard, of Geneva, has recently expressed the opinion that this termination is far more frequent than is suspected, and, moreover, that it occurs more frequently in the early than in the advanced stages of disease. The memoir in which this opinion is expressed is in other respects valuable, and in some particulars so closely approaches the opinions of Dr. Latham, that it may advantageously be considered in connection with his volume.

Sudden death in cardiac disease happens, according to M. Lombard, in two ways,—by syncope and by spasm. To the former he refers those cases in which the patient is known to die in the act of turning in bed, or, as is more frequently the case, in the act of defecation. In illustration of death by spasm of the heart, the author adduces three cases, in each of which the fatal event was preceded by a sudden and agonizing pain in the precordial region (a first and last attack of angina pectoris). We have only space for the author's comments upon these cases.

"The cases reported," he observes, "have all a certain similarity. The patients were, to all appearance, in nearly perfect health, complaining only of slight breathlessness on exertion. They were all seized with sudden pain in the chest, with a sense of suffocation, and in a few minutes life was extinct. They preserved their intelligence to the last, and in all, the mouth and nostrils were filled with froth after death. What was the cause of death? Was it syncope?" The author answers in the negative; for although fainting is preceded by a certain amount of uneasiness, it does not amount to agony. Neither, he thinks, could it have been caused by paralysis of the cardiac nerves, because, had the paralysis been complete, death would have been instantaneous; if incomplete, it would not have arrived so rapidly as in the cases referred to. The only explanation which remains, is that of spasm of the heart, and this the author thinks the correct one.

M. Lombard refuses to acknowledge these cases as angina, because they terminated with the first paroxysm, but, as Dr. Latham has shown, this is no ground of distinction.\*

24. *Rupture of the Valves of the Heart from Muscular Exertion.*—Dr. Richard Quain exhibited, at a meeting of the Pathological Society of London, drawings and specimens illustrative of the serious injuries which sometimes occur to the left ventricle of the heart, or to the aortic valves, during muscular efforts.

The first specimen was a heart which had undergone fatty degeneration, and through the posterior wall of the left ventricle of which a rupture had occurred during some slight muscular efforts. He detailed the general characters of the injury, and the microscopic appearances of the change which the texture of the heart had undergone. He explained that in cases such as this, the blood accumulates in the feebly acting ventricle; it presses against and prevents the effective action of the aortic valves. The blood of the ventricle and that of the aorta is thus made a continuous column, which presses with the force of many pounds on the surface of the ventricle, predisposed by the degeneration of its texture to yield to this force, and rupture then occurs. On the other hand, when the ventricle acts vigorously, and when, during muscular efforts, the pressure of the column of blood in the aorta is increased, its valves sometimes yield and are seriously injured; of four cases of this accident he gave the striking details. One occurred in a smith working in a state of excitement with a sledge hammer; the second in a porter who tried in a passion to force open a door; the third in a man heavily laden; and the fourth in a groom running with a horse. Of each case he gave the symptoms and physical signs, the latter being clearly those of regurgitant disease of the aortic valves: the post-mortem appearances in three of the cases showed the exact nature of the lesion in each, and that it was connected with the accident referred to. The fourth case still lives.

The inferences drawn from these cases by the author were—

1st. That the aortic valves are liable to injury during muscular efforts.

2d. That this injury is not necessarily immediately fatal; but that this will probably be the result in a period varying from one to two years.

\* Gazette Médicale, Nov. 21, 1846.

3d. That the symptoms, physical signs, and progress of this injury, correspond to those of the like lesion which result from disease.\*

25. *Encephaloid Disease of the Heart*.—Three cases of this rare locality of cancerous matter have recently been recorded, two by Mr. Prescott Hewett,† the third by Mr. Ormerod.‡

26. *Hydatids of the Heart*.—M. Griesinger relates an instance of sudden death which was caused by the rupture of an hydatid cyst in the septum, and discharge of its contents into the right ventricle. The case has no interest beyond its rarity, the author having been able to discover only fifteen similar instances. Of these, the cyst was situated in the right auricle in 3 cases, in the right ventricle also in 3, in the septum in 1, in the parietes of the left ventricle in 2, in the external surface of the same ventricle in 1, in the apex in 1, locality not mentioned in 3.§

27. *Anamni. fatal case*.—This case was met with by Mr. Colambell, and occurred to a female who had suffered from severe hemorrhage during labour, thirteen months previously. When first seen by Mr. Colambell, the symptoms were those of excessive exhaustion, with neuralgia and amaurosis. Delirium and jactitation ensued, which speedily ended in dissolution. It does not appear that the treatment adopted in this case was sufficiently stimulating.||

28. *Aorta, Disease of*.—Dr. Bellingham, at a meeting of the Surgical Society of Ireland, called attention to a morbid condition of the arch of the aorta, the physical signs of which were so similar to those of regurgitant disease of the aortic valves, that, as he believed, the one disease was often mistaken for the other. The state of the aorta alluded to, was an inelastic and rigid state of its coats, combined with roughness of the lining membrane, and more or less dilatation of the vessel. The views of the author are rendered sufficiently distinct in the following *resumé* given by himself.

1st. That under certain circumstances, the blood regurgitates into the arch of the aorta from the carotid and subclavian arteries, during the diastole of the ventricles.

2d. That regurgitation into the arch of the aorta occurs whenever the coats of the vessel become rigid and inelastic.

3d. That this regurgitation develops a sound which closely resembles the second sound of the heart, and is audible at the same periods of the heart's action.

4th. That this rigid and inelastic state of the arch, combined with roughness of the interior, and slight increase of caliber, is characterized by certain well-marked physical signs, by which, in the majority of cases, it may be readily recognized.

5th. That these physical signs resemble those of valvular disease.

6th. That the form of valvular disease with which it is most liable to be confounded is that of regurgitant disease of the aortic valves, which it resembles in the occurrence of a murmur with the second sound in the jarring pulse, and the visible pulsation of the arteries; symptoms heretofore considered to be pathognomonic of regurgitant disease of the aortic valves.

7th. That the deposits which are met with in the arch of the aorta are not the result of inflammatory action either acute or chronic; neither can they be considered as the result of a natural degeneration of the tissues in advanced life, but they ought to be ranked among adventitious deposits.

8th. The dilatation of the arch of the aorta is more frequently the result of regurgitation from the vessels which arise from it, than from the distending force of the column of blood propelled by the left ventricle.

9th. That the knowledge of the fact that regurgitation into the arch of the aorta occurs in cases where this vessel is inelastic from disease, enables us to explain the cause of the second sound heard in cases of aneurism of the arch of the aorta, and likewise for the second impulse which is felt when the aneurism forms an external tumour.¶

\* Report of the Lond. Pathol. Society, Oct. 1846. † Med. Chirurg. Soc., Nov. 11.

‡ Lancet, Feb. 20.

§ Gaz. Méd., Oct. 31, 1846, from the Archives für Physiolog. Heilkunde.

|| Medical Gazette, Feb. 12, 1846.

¶ Dublin Med. Press, April 23, 1847.

§ IV.—*Diseases of the Chylopoietic System.*

We have two new works to notice under this department, one of which, by Dr. Child, entitled "On Indigestion and certain Bilious Disorders connected with it." &c. is occupied with the functional disorders of the digestive organs; the other, "Practical Observations on some of the Diseases of the Stomach and Alimentary Canal," by Dr. Alderson, treats both of functional and organic disease of the same organs, the latter forming, however, by far the most important portion of the book. Both these works are distinguished for a more than ordinary practical tone of writing, but that by Dr. Alderson is particularly valuable, as affording results of the experience of a physician not mature in years only, but practised also in that, without which fulness of years is worse than useless, viz., habits of correct observation.

29. *Functional Dyspepsia.*—Dr. Alderson and Dr. Child both take up the subject of the functional disorders of the digestive organs; but the remarks of the former are, as he denominates them, cursory, and it is evident that it is not the author's object to give a complete and systematic description of the various forms of functional derangement, but rather to give a brief sketch of the subject, as a contrast to the more severe diseases which occupy the first and largest portion of the volume. We find therefore in this part but little to notice, with the exception of the chapter on the comparative views of the symptomatology of functional and organic disease of the stomach, in which the reader will find much that will aid his diagnosis.

Dr. Child takes up the subject of functional dyspepsia in a much more extended manner. In his first chapter he reviews the causes, both predisposing and exciting, of indigestion in general: and in the second, gives a good account of the physiology of the digestive process.

Chapter 3 includes the proximate cause and morbid anatomy of indigestion. The author classes the causes of functional disturbance of the stomach under four forms. 1. Disturbance in the circulation of the mucous membrane of the stomach. 2. Disordered sensibility. 3. Weak or irregular muscular action. 4. Morbid secretion. From these elements the signs of indigestion generally spring, and its varieties have been arranged by authors according as one or other appears to preponderate.

In chapter 5 the author considers the most usual mode of origin of indigestion. A careful inquiry into a large number of cases has convinced him that it generally commences in one of four ways: 1. After a fit of "indigestion." 2. From the habitual use of an over-abundant diet. 3. It takes root during a state of general impaired health. 4. It is excited by faulty action of the liver and duodenum. Under the latter of these forms is ranged the common group of symptoms which go under the popular term of "biliousness."

The author next enters upon the consideration of the particular symptoms of dyspepsia, treating of each by itself in a separate chapter; and first of pain. An inquiry into the comparative frequency of this symptom in different parts of the body has furnished the author with the following results: Of 200 cases, the pain was referred to the epigastrium in 141: to the sternum in 110: to the left hypochondrium in 36: to various parts of the abdomen in 25: to the region of the pharynx in 17: to the right hypochondrium in 15: to the umbilical region in 13. Besides these direct pains, there are others in remote regions of the body, which are evidently sympathetic. These may exist at all times, but are correctly stated by the author to be greatly modified by particular states of the system unconnected with the dyspeptic derangement, such as general debility, the hysteric diathesis, uterine derangement, the catamenial periods, &c. In practice the author has found the associations of pain and dyspepsia to be in various ways. For instance, the pain may be directly produced by the contact of food: such are the epigastric pains immediately following the ingestion of certain substances, the pure gastric headache, &c. Again, the pain, though usually caused by the dyspepsia, may also be produced by other causes. To this class the author refers most of the anomalous pains observed in indigestion. The treatment of these various pains, both medicinal and dietetical, is very judiciously laid down, but does not call for particular notice.



Tenderness on pressure appears, from the author's investigation, to exist in a large proportion of dyspeptic cases, and was found by him to occur at different spots in the following proportions. At the pit of the stomach, 55 times: lower end of the sternum 43 times: in left hypochondrium in 18: right ditto 14; umbilical region in 5; abdomen generally in 4; right side in 3: left side in 2.

Dyspeptic headache is one of the most important and frequently most troublesome symptoms of the complaint, and meets with much attention at the hands of the author. His treatment of this symptom will be found among our extracts (Art. 22).

Pyrosis was noticed 143 times in 200 cases which came under the author's observation, and of these the fluid is represented as having been acid in 71: insipid in 57; bitter in 56; salt in 13. The treatment recommended is the exhibition of sedatives, antacids, and alteratives. The pulv. kino comp. is favourably spoken of where the symptom merges on gastrorrhœa.

Several other symptoms, as vomiting, nausea, constipation, faintness, &c., are mentioned in succession: and the author then introduces chapters on the appearances of the tongue in dyspepsia, on the general treatment of dyspepsia, and on diet.

In conclusion, we may repeat that, though Dr. Child's volume contains nothing but what any physician of ordinary skill in his profession is fully acquainted with, we think that it may be recommended to the young practitioner as a successful attempt at a generalization of the numerous phases of the protean malady of which it treats.

30. *Cancer of the Digestive Organs.*—The main part of Dr. Alderson's volume above alluded to is occupied with the consideration of this painful and unpromising department of pathology. The method which the author has adopted is one particularly suited to the object in view, that of giving the results of individual experience, without any attempt at a professed treatise, each subject being introduced by a brief historical description, and illustrated by well-selected cases. Among the various forms of cancerous disease of the digestive tube we have cancer of the cardiac orifice, of the parietes, and of the pyloric extremity of the stomach, cancer of the œsophagus and of the pharynx, secondary cancerous infiltration of the liver, and carcinoma of the external surface of the stomach, involving it and other organs. The latter of these alone appears to call for a more extended notice.

"Deposit of cancerous matter," observes Dr. Alderson, "may take place either beneath or upon the serous membrane covering the stomach, and may vary in consistence. As the deposit increases it gives rise to inflammatory products, by which the contiguous viscera are glued together, and at length the stomach, liver, pancreas, omentum, and more or less of the intestines, are united in a mixed mass of cancerous deposit and inflammatory products. In the later stages of the disease ulceration finds its way into the duodenum, colon, or stomach; jaundice is sometimes a symptom: and the liver is generally affected by secondary deposit."

Among the earliest symptoms of this affection (a single case only is recorded) the author has noticed a peculiar obstinacy of the bowels, with moderate pain. The tongue is clean, the appetite morbid, with great thirst. As the disease increases, an ill-defined tumefaction is perceived in the epigastrium; vomitings and hiccough soon ensue, the tongue becomes aphthous, blood is passed by stool, and the patient dies exhausted.

The treatment recommended by the author is of the mildest kind, and, as might be expected, unsatisfactory as regards permanent relief.

31. *Hypertrophy of the Stomach.*—Dr. Alderson devotes a chapter to this lesion, which is, according to the opinion of many, only an early stage of carcinoma. The subjects of the disease are stated to be from 40 to 50 years of age, and chiefly those who have indulged freely in stimulants. The disease is preceded by nausea in the morning, and want of appetite, and in the latter stages is attended with constant vomiting and great thirst. Two or three cases are appended.

32. *Treatment of Organic Diseases of the Stomach.*—Before ulceration commences Dr. Alderson advises active counter-irritation, with the internal use of sedatives, such as hydrocyanic acid and unstimulating aperients, and the plainest diet, such as milk and lime-water. When cancerous disease is fully established, counter-irri-

tants may still be employed, but with more care, and the use of sedatives become peremptory. Borax and dilute nitric acid may also be given.

33. *Dysentery*.—A long period has elapsed, happily for this country, since the occurrence of dysentery in an epidemic form has been sufficiently severe or widely spread to excite attention. We have now, however, to lament that in one portion of the British dominions at least this fortunate immunity is at an end; and that the want and destitution which at this time press so heavily upon our sister country bring in their train this, one of its most frequent and most deadly attendants. The conviction of the importance of a full acquaintance with the pathology and treatment of the disease at the present crisis has prompted Dr. Harty to issue a second edition of his "*Observations on the History and Treatment of Dysentery*," &c.\* a work which, although its fundamental propositions appeared as long since as the year 1804, may be still considered to offer a satisfactory account of the pathology of the disease in question. The following cursory analysis of this volume will give our readers some idea of the author's opinions.

The prominent doctrine which the author endeavours to establish is seen in three propositions: 1st, that there is but one form of dysentery (*simple dysentery*), and that this simple dysentery is not attended by idiopathic fever, and is never contagious; 2d, that every other form of the disease, when epidemic, is simple dysentery, combined with either intermittent, remittent, or continued fever; and, 3d, that the latter combination alone is contagious. The contagion of dysentery is not regarded by the author as peculiar to that particular intestinal affection; but one which, under certain circumstances, may give rise to some other affections, which are known to be epidemic at certain seasons. These are, according to the author, angina maligna, hospital gangrene, erysipelas, and puerperal fever. His object therefore may be stated to be, amongst others, that of establishing the existence of a certain *compound contagion*, which may give rise to either of the last-mentioned diseases, or dysentery, as the case may be, the latter, as we understand him, being often a complication of the others.

In the first chapter simple dysentery is defined, and in the succeeding one its affinity to rheumatism is, as the author believes, established on unquestionable authority; but we must confess that to us the conclusion and its premises are anything but satisfactory. Chapter 3 takes up the combinations of dysentery, beginning with those of intermittent and remittent fever. The more important complication, that of dysentery, with the contagious typhus, is considered at length in chapter 4, and it is further shown that it is this combination which forms the most fatal variety of the disease, and that this alone is contagious. The subject of the contagious nature of dysentery is more fully discussed in the succeeding chapter, which is divided into two sections: the first containing "proofs that simple dysentery and its intermittent and remittent forms is not contagious;" the second exhibiting "proofs that the combination of simple dysentery with typhus fever is contagious." This chapter concludes with a concise account of the three varieties of the disease above mentioned.

The succeeding portion of this volume is occupied with the treatment of dysentery, and the various ingredients in this treatment, viz., venesection, enetics, purgatives, diaphoretics, the warm bath, mercury, bark, &c., are in turn reviewed. This portion of the work bears the strongest impress of its origin during the author's inexperienced years, as it is chiefly made up of the opinions of others, and contains but little, as we think, the second edition might have done, of the results of a matured personal acquaintance with the disease.

The concluding chapter traces the analogy of dysentery to hospital gangrene, puerperal fever, erysipelas, &c., and its origin in one and the same poison. Without presuming to determine whether this opinion be correct or not, as regards dysentery, it is certainly worthy of attention, as corroborative of views which we have already had occasion to notice, respecting the close affinity which exists between malignant puerperal fever, erysipelas, and typhus, of the reciprocal production of which there appears to be little doubt. (See Abstract, vol. i. p. 243; vol. iv. p. 266.)

A description of epidemic dysentery, as it appeared at the Milbank Penitentiary,

\* *Observations on the History and Treatment of Dysentery and its Combinations*, &c., 1847.

has been given by Dr. Baly in the last series of the Gulstonian lectures. Commencing with the normal anatomy of the intestinal tube, the author, in the first place, notices the morbid appearances found in the large intestines. These were stated to be in the early stage (the patient having died of some intercurrent affection), tumefaction of the solitary glands in the rectum and sigmoid flexure: forming small, pale red eminences, with or without a vascular ring round the base. At a more advanced period, the summits became abraded, and the vascular ring more extended. Dr. Baly considers the abrasion as the result of a slough, not of an ulcer.

In dysentery of the "second degree," two forms of structural change were found. The first consisted of large ulcerations of irregular form, chiefly occupying the situation of the rugæ and longitudinal bands; the other was the appearance of small, round, excavated ulcers. In its most severe degree, the disease was frequently fatal in a few days. In such, the mucous membrane of the large intestines is extensively disorganized.

After the description of the pathological appearances, of which the above is a very brief outline, the lecturer inquires whether the disease witnessed by him, and the dysentery of hot climates, are the same or distinct affections. He decides that there is no essential difference between them. Abscess of the liver was not observed by him in the epidemic in question, and he is therefore induced to think that there is some agency superadded to the intestinal ulceration, which makes the liver more prone to take on suppurative action in one climate than in another.

The account of the symptoms of the "Penitentiary" epidemic does not require particular mention; it suffices to state that they varied according to the severity of the case, in some resembling the simple dysentery described by Dr. Harty, in others exhibiting typhoid prostration. This epidemic was remarkable for the appearance of unusual nervous symptoms: sometimes of an epileptic or tetanic character, at others resembling catalepsy. These anomalies meet with no explanation at the hands of the author.

In the treatment of the epidemic, venesection was seldom required, but local bleeding by leeches was generally resorted to. Calomel and opium, mild aperients, such as castor oil, large cataplasms, opiate enemata for the tenesmus, nourishment and stimulants in low forms of the complaint, were all found serviceable under appropriate circumstances.\*

#### § V.—Diseases of the Genito-Urinary System.

34. *Morbus Brightii*.—Since our last report of the more recent investigations of this disease, Gluge's "Atlas der Pathologischen Anatomie," Lief. 10. and the last volume of the "Medico-Chirurgical Transactions," containing an elaborate essay upon the subject, by Mr. Toynebee, have reached us. Of these we have now to give some account.

Gluge's Atlas (No. 10) is occupied with the pathological history of three lesions of the kidney—*inflammation*, *steatosis* or fatty degeneration, and *Bright's disease*. Of the latter, the author gives a long historical introduction, followed by a summary of Rayer's views on the diagnostic value of albuminous urine, the chemical pathology of the blood, and the results of microscopical investigations into the morbid renal structures. In the latter of these lectures, the author's remarks fully bear out our assertion in a former Report, that the discovery of fatty globules in the kidney, as an element of Bright's disease, did not originate with Dr. George Johnson, but was previously known to the author himself. Canstatt, &c. The fact, however, is still more decidedly shown in the succeeding section, devoted to the inquiry, "What is the nature of Bright's disease?" which forms the conclusion of the number. He there observes—

"We have thus seen that albuminous urine and dropsy are connected with certain anatomical changes in the kidney; but microscopic investigations have shown that these changes are produced by different pathological processes. The word '*nephritis albuminosa*' is not correct, for many cases occur which do not depend upon inflammation, but upon the *deposition of fat* in the kidneys; neither does the

\* Medical Gazette, April, 1840.



term 'albuminuria' seem applicable, as the urine may be albuminous without the presence of Bright's disease, and, *vice versâ*, Bright's disease may exist without albuminous urine; lastly, the term "granulated kidney" is inapplicable, as the kidneys are frequently almost free from granulations. We think, for these reasons, that we have advanced both the pathology and treatment of the disease, in having demonstrated that there is another lesion besides that of inflammation, namely, that of *fatty degeneration* (steatosis), and in having shown that Bright's disease mostly depends upon one or other of these lesions." [Gluge's observations were made in the year 1840.—Ed.]

Mr. Townbee's essay contains a most elaborate account of the normal anatomy of the kidney, succeeded by observations on Bright's disease. The true cause of this disease is considered by the author to be the circulation in the kidney of blood unnaturally charged with carbonized and azotized elements; a condition which is produced in the rich by luxurious habits and deficient exercise, in the poor by defective ventilation and consequent insufficient supply of oxygen. The author agrees with Dr. Johnson, as to the presence of fatty globules as a pathological element in this disease, but differs from him in regarding congestion as a necessary precursor of that change. His description of the pathological appearances seen in the kidney is as follows:

*First stage.* Kidney enlarged; innumerable black points visible, which are the Malpighian bodies dilated and distended with blood. White spots of fatty matter begin to be perceptible. The peculiar features of this stage are, enlargement of the arteries entering the corpora Malpighiana; dilatation of the vessels of the tuft, capillaries, and veins; increase in size of the capsule of the tuft, and increase of the parenchymatous texture of the organ.

*Second stage.* Kidney greatly increased in size, smooth, and exhibiting numerous white spots. The artery of the tuft becomes greatly enlarged, tortuous, and dilated into varicose pouches. The vessels of the tuft itself are also enlarged to ten or fifteen times the natural size. Occasionally the tuft is broken up. The tubuli are also two or three times larger than natural, and sometimes present distinct aneurismal pouches. Fat is deposited in the cells of the parenchyma.

*Third stage.* Kidneys smaller than natural; white pustules prominent on the surface; capsule adherent; surface frequently studded with small vesicles. Organs anæmic, cortical portion contracted. Arteries more contracted than in the former stage; vessels of the tuft impervious. Tubuli distended with fatty deposit, sometimes distended with blood. Parenchyma hard, composed of elongated stellated cells, from the angles of which fine threads are given off.

As a preventive of this disease, the author suggests an unstimulating diet in the upper classes, abstinence from intoxicating beverages in the lower; regular exercise, free ventilation; in a word, the adoption of a just hygienic regimen.\*

In the treatment of albuminuria, M. Rayer has derived benefit from the extract of rhatany and warm baths; the dose of the former was ʒss in the day.†

35. *Suppression of Urine*.—A fatal instance of suppression of the renal secretion is mentioned by Mr. Tovey. Death occurred on the tenth day of the suppression.‡

#### § VI.—Diseases of the Skin.

36. The admirable work on this department of pathology, by Mr. Erasmus Wilson, has reached a second edition, in which form it must be admitted to be inferior to no work on the subject in the English language. The author's classification of the diseases of the skin is founded upon the normal anatomy and physiology of that important organ, and strictly deserves the name which he has adopted, of a "natural" classification. He divides these diseases into four primary groups.

1. Diseases of the dermis.
2. Diseases of the sudoriparous glands.
3. Diseases of the sebiparous glands.
4. Diseases of the hairs and hair-follicles.

\* Medico-Chirurg. Trans., vol. 29.

† Med. Times, Jan. 30, 1847.

‡ Lancet, July 18, 1846.

The first of these groups is further divided thus:—*a.* Inflammation of the dermia. *b.* Hypertrophy of the papillæ of the dermia. *c.* Disorders of the vascular tissue of the dermia. *d.* Disorders of its sensibility. *e.* Disorders of its chromotogenous function.

Inflammation of the dermia is again subdivided into congestive, effusive, suppurative, depositive, squamous: and, lastly, that originating in the presence of parasitic animals, as the acarus. Under the latter group, the author, both in his preface and in a separate chapter towards the close of the work, enters minutely into the natural history of the "itch animalcule," and we can safely recommend his observations, as embodying a perfect account of the habits and pathological importance of this extraordinary animal.

The diseases of the second and third groups are arranged into those which consist of augmentation, diminution, alteration, and retention of the secretions respectively. Under this division the author gives an accurate account of the "steatozoon folliculorum," another curious parasite, discovered by Dr. Simon, of Berlin, and regarded by him, erroneously in Mr. Wilson's opinion, as a species of acarus.

The fourth group is further subdivided into diseases which consist respectively in alterations of the colour, shape, direction, and quantity of the hair. The value of the present edition is much increased by the addition of a series of coloured engravings, in which the elementary forms of cutaneous diseases are beautifully delineated.

#### § VII.—*Therapeutics.*

37. The past six months have not been distinguished by any material addition to our therapeutical resources, if we except the "Inhalation of Ether," which we have considered as of sufficient importance to deserve a separate Report.

We may state, however, that the plan of superficial "firing," recommended by Dr. Corrigan ("Abstract," vol. iv. p. 102), has been extensively tried by Dr. McCormack, who has reported very favorably of its powers.\*

Lugol has also published some further observations on the use of iodine in scrofula, more particularly with reference to the use of iodine injections in fistulous sinuses and abscess. The strength used in his rubefacient solution (iodin.  $\overline{\text{ss}}$ , potass. iod.  $\overline{\text{3j}}$ , aquæ  $\overline{\text{3vj}}$ ) diluted to a pale sherry colour.†

Atropine has been recommended by Dr. Brookes in the form of ointment (atropine grs. v, lard  $\overline{\text{3iij}}$ ) for tic douloureux.‡

\* Lancet, Jan. 5, 1847.

† Gaz. Méd., Oct. 1846.

‡ Lancet, Jan. 30, 1847.

## II.

### REPORT ON THE PROGRESS OF SURGERY.

BY HENRY ANCELL, ESQ., M.R.C.S.

THE discovery of the effects of the inhalation of æthereal vapour in producing insensibility to pain during the performance of surgical operations, and the successful application of this discovery in the practice of almost all the leading surgeons of America and Europe, is unquestionably the most remarkable event in the annals of surgery, since our last volume was completed, and indeed for many years past. The Editor has undertaken to give a succinct account of this discovery in a separate Report, in the present volume, to which we refer our readers; and we have accordingly refrained from introducing, in the department of general surgery, any cases or remarks relating to it. One of the greatest desiderata, perhaps the greatest in surgical practice—the prevention of pain—appears thus, with some qualification, to have been accomplished. The operations for lithotomy and hernia, amputations, the removal of tumours of diseased bones, and, in fact, most of the major and minor proceedings in surgery have been carried through, the patients being in a state of perfect unconsciousness, and the drawbacks and inconveniences, so far as they are at present understood, are comparatively trivial. Experience alone can ultimately determine the value of æthereal inhalation, the individuals to whom it is especially applicable, and the exceptional cases; our readers are furnished with an account of the apparatus required, the mode of proceeding, and the facts and observations at present before the profession, and our future volumes will convey to them the details of the progress of the discovery, and the more settled judgment of its merits which the profession may arrive at by time and accumulated observation.

On the subject of the progress which surgery is at present making, we have been forcibly struck by some passages in an interesting communication to the "Medical Times," from Dr. Bushnan, of Wiesbaden. In the extracts of our present volume, the reader will find an account of a new and successful operation for false-joint, by Professor Dieffenbach, extracted from this communication (p. 121), and it is Dieffenbach's practice, of which Dr. Bushnan has been an eye-witness, that has led to the observation in question. Dr. Bushnan regards the improvements suggested and adopted by this surgeon as establishing an era in the history of the science, and we are induced to record this opinion, because the professor's principles and practice have not always been regarded in the same favourable light by commentators in this country who have not had the opportunity of following him in his "klinik." Dr. Bushnan states, that he first learned, in Dieffenbach's wards, how very few instruments, and of what simple construction, are required in the hands of a truly scientific and skilful man, to perform the most formidable operations; that he there witnessed the operator emancipating himself from an incubus of surgical absurdities and pedantic dogmas, and arriving at greater results than any other surgeon has approached in any age or any country. Dieffenbach, we are informed by Dr. Bushnan, never commits the safety of a patient to the mechanism of an instrument. "His hand, guided by a master-mind, and armed with a simple scalpel, is quite sufficient: and whether we see him perform the most inconsiderable or the most formidable operations, all seem so easy, so simple, so little calculated to inspire dread, that we are tempted to think we could do the same ourselves, and with the like results. There is a total absence of all parade; no fuss, no bustle, no display, as with the older surgeons, but a calm and quiet confidence that convinces you that with Dieffenbach has begun a new surgical



era, characterized by the abolition of all complicated apparatus, and, founded upon a sound physiology, by a greater amount of success than has hitherto been attained."

As the progress of a science is greatly dependent upon the manner in which it is taught, considerable interest attaches to the following statement. In Dieffenbach's theatre, if the nature of the case permits it, an advanced student is allowed to operate, while he himself superintends, helping, aiding, and instructing him; and Dr. Bushnan states, that he knows no surgical hospital where so good a mode of instruction is adopted, and none where the poor receive more advantages or the pupil is so well instructed.

Amongst the papers on the general principles of surgery which have come under review during the last six months, there is one by Dr. Gerdy, "On the Treatment of certain Surgical Affections by Elevation of the Diseased Parts." We have frequently had occasion to reflect on the neglect of correct principles as applied to practice in relation to the position of the whole or of the various parts of the body, and the influence which this must exercise on the results of cases, but whether M. Gerdy has carried his views beyond their legitimate value, experience only can decide. For the purpose of still further calling the attention of our readers to this subject we are induced to include, under one of the following sections of our Report, a short abstract of Mr. Coles's work on "Spinal Affections, and the prone system of treating them."

M. Gerdy\* has for some time been in the habit of treating certain inflammatory affections by placing the limb or part in such a position as to favour, in the greatest possible degree, the return of blood to the heart. His plan does not exclude the application of the usual means of treatment, but by several recent writers it is believed in many cases to be sufficient in itself to effect a cure. If the thumb or hand, for instance, be inflamed, the patient is made to lie so that the elbow is kept higher than the shoulder. The forearm is placed perpendicular, supported by cushions, care being especially taken that the circulation is not impeded by bandages; the hand is then enveloped in bandages, to which tapes are fixed and attached to the top of the bed. These means, with some simple modifications, are likewise made use of in inflammation of the lower extremities. M. Gerdy elevates the end of the bed by placing a chair under it, thus raising the foot upon the summit of an inclined plane. Once so placed, and care being taken that no injurious pressure is exerted, the patient must not move from the position even to satisfy natural wants, for, it is stated, he may destroy, in a few minutes, all the benefits which have been obtained by whole days of repose. Although elevation cannot be so efficaciously applied to the *head* and *trunk* as to the extremities, it yet may be employed to a certain extent. Supposing the *eye* to be inflamed, the patient should lie with his head high, and on the opposite side to the one affected. M. Gerdy illustrates his principle by reference to inflammatory affections and discharges from the womb, which are tedious in recovery, "owing to the stagnation of the blood in the organ." If a woman with these affections, who has been accustomed to the vertical posture, goes to bed and maintains her hips in an elevated position by means of pillows, she will soon find her case amended. The same principles apply to inflammatory affections of the face, breasts, &c.

The advantage of this plan of treatment is said not to be confined to inflammation, but is equally serviceable in ulcers, uterine hemorrhages, and varicose veins. In many instances of the latter disease, in M. Gerdy's wards, elevation alone of the limb has been completely successful; the utility of the plan is also incontestable in varicocele. The following are the general conclusions which are stated to have been arrived at: 1st, that elevation of the diseased part, without the intervention of other therapeutical measures, will cut short certain inflammatory affections if employed sufficiently early; 2d, that in phlegmon it relieves pain by diminishing the quantity of blood in the part; 3d, that it promotes the cure of congestions of, and chronic discharges from, the uterus; 4th, that hemorrhages may be suspended by it; 5th, that it will cure various ulcers of the lower extremities; 6th, that varices and hemorrhoids are favourably influenced by an elevated

\* Med. and Surg. Journal, March 10, 1847, p. 137.

position, and 7th, that where it is not sufficient in itself to effect a cure, it is always a powerful auxiliary.\*

We have more than once had occasion to remark on the importance of a knowledge of the pathology of the blood to surgical science, and this appears daily to be better appreciated. The difficulty of the subject is commensurate with its importance, and no doubt we shall fall into many errors before correct principles are arrived at, so that a prudent caution is essential in receiving new doctrines. There is a paper in the journals, by Dr. Hertzveld, on "Purulent fermentation," in which it is stated, that the blood generally acquires a greater fluidity than natural, and the disease is characterized by the formation of purulent depots in various parts of the body, and frequently with effusion of fetid ichor, and that this state of the blood presents various forms of disease, which have been variously designated as phlebitis, gangrenous erysipelas, absorption of pus, malignant inflammation, &c.: and that it always arises under the influence of infecting matter, which probably differs in different cases. The remark transpires, that it has long been a dispute in cases of purulent poisoning, how the poison is taken into the blood, contact of pus with the blood, or the absorption of pus itself, being by no means necessary. Dr. Hertzveld draws the following conclusions upon this important subject:†

- i. Every case of purulent poisoning is not produced by phlebitis.
- ii. Purulent poisoning arises from a product acting prejudicially on the blood, and which product is the result of a chemical process in the pus.
- iii. This deleterious product is grafted not on the pus-cells, but in the pus-serum.
- iv. In order to produce purulent poisoning, direct admixture of the pus and blood is not essential.
- v. When, in consequence of phlebitis, a mixture of the pus and blood occurs, there ensues, as a result of the mechanical properties of the pus-corpuscles, stagnation of the circulation and coagulation of the blood; the true purulent poisoning only arises when the pus has undergone the chemical changes above alluded to.

Magendie demonstrated, by experiment, that the injection of stagnant water into the veins produces the same symptoms as putrid pus; thus, then, it is neither phlebitis nor mechanical obstruction by pus-corpuscles which produces these diseases.‡

Our present Report embraces some other points of interest connected with the principles of surgery, which will be found in the sections relating to Abdominal Surgery, Aural Surgery, Lithotomy, Burns, Aneurisms, &c. &c.

Passing from the more general principles, it is important to remark the progress of experience where new operations have been proposed. Of the beautiful but tedious and difficult operation of staphyloraphy (Abstract, vol. i. p. 122), Mr. Fergusson§ has remarked that, notwithstanding its apparent merits, there are certain disadvantages connected with it which should always be borne in mind, when an opinion is required on the propriety of its performance, or the probability of its results. Even with the utmost care the proceeding, when done, may end in partial or complete failure. There may be some portion of the fissure, perhaps in the hard palate, which may baffle the surgeon's skill; or, from causes over which he has no control, the union of the soft parts, which it is his object to effect, may not occur. Even under the most favourable circumstances, as regards union, the patient's speech may not be so much improved as had been anticipated. Then there are difficulties connected with the operation so vexatious, so trying to the surgeon's patience, as well as to the endurance of the patient himself, that it must always be looked upon as one of the most harassing that we are ever called upon to perform. The slightest opposition on the part of the patient may prevent the operation being performed; and a trifling indiscretion in not attending to the injunctions of the surgeon afterwards, may mar the effects of the proceeding, however successfully it may have been accomplished at the time. All these circumstances, as observed in different cases, have no doubt had effect on the

\* Archives Gén., Nov. 1846.

† Schmidt's Jahrb., Jan. 1847.

‡ Month. Journ. of Med. Science, March, 1847, p. 703.

§ Med. Times, March 6, Lectures on Select Points of Surgery.

surgeon's mind; and as the successful results have not been commensurate with the seeming disadvantages, have rendered him somewhat careless regarding the proceeding.

The republication by the Sydenham Society of the papers on "The Injuries and Diseases of the Bones," from Professor Dupuytren's "Leçons Orales;" and the recent discussion of this part of surgery, in several periodicals, has furnished us with some interesting and important extracts, which, although they cannot be regarded strictly as novelties, are rarely embodied in systematic treatises; and having been thus again brought before the profession, are worthy of record in our abstract of the medical sciences. The first part of our present volume, accordingly embraces papers of interest (Arts. 42, 47, 50, 51, 52, 53, 54, 55, 63, 70, 76, 77, 85) on the diagnosis, pathology, and treatment of fractures, dislocation, and the diseases of bones.

### § I.—*Injuries and Diseases of Arteries and Veins.*

1. *Aneurism: its spontaneous Cure.*—Although aneurism, if left to itself, nearly always ends fatally, it is capable of a spontaneous cure, which may be brought about in various ways.\* The following, for instance, is a case of spontaneous cure of a femoral aneurism, related by Mr. Kirby † A man presented himself with mortification of the two principal toes of the right foot. There was an aneurism of the femoral artery above its passage through the tendon of the triceps. The disease continued for several months; in time the toes became separated at the joints: the tumour by degrees lost pulsation, and finally shrunk into a little lump. The veins of the leg were wholly free from congestion. Mr. Kirby remarks that the usual operation would have been unjustifiable in this instance, involving much suffering, and incurring much risk by interrupting nature in her efforts to save a limb and preserve life. He recollects cases of this kind treated by ligature, and affirms that when gangrene threatens, the time for the operation is past: its performance being well calculated to defeat the end it has in view.

In the "Gazette des Hôpitaux,"‡ also, an account is given of an aneurism of the posterior iliac artery, which had been cured spontaneously. It was detected in a body at the school at Montpellier.

2. *Aneurism of the Basilar Artery.*—A case will be found in the "American Journal," which was omitted in a former Report from want of space § The patient was affected with perfect hemiplegia of the left side, and other symptoms of organic disease of the brain. His early history was unknown: but on examination of the body after death, besides the brain being somewhat softened, and an effusion of serum, there was an aneurismal enlargement of the basilar arteries, the size of a pigeon's egg, found pressing on the pons varolii. It contained an irregular, very hard, and dry clot of blood, surrounded by a red fluid, of the consistency of pus. The vertebral arteries were seen entering the lower part of the sac, about a quarter of an inch apart. An extravasation of blood, from rupture of the sac, had taken place into the substance of the pons, which was softened, and of a bluish colour.

Previous to death, when the patient was seated on the side of the bed, from which he could not rise without assistance, he required to be supported, and then there was an antero-posterior vibration of the head and body independent of the will. While lying, the right foot was in constant quick motion, being alternately flexed and extended on the leg: this was uninterrupted while awake, and occasionally observed when he was seemingly asleep. He slept deeply, snored loudly, and was often roused with difficulty. His intellect seemed to be perfectly clear, but very slow. When spoken to, he appeared cheerful, although his attendant states he was despondent, often expressed a wish to die, and even asked for means to commit suicide. It was ascertained that some months before his death he had great weakness of the knees, and walked about with a stick in his right hand, which was always very "shaky," and he had great difficulty in standing still without leaning his back against something. He ate voraciously, and was several times near choking, from attempting to swallow large masses of food.

\* South's Chelius, part xi, p. 209.

† Jan. 1846, p. 64.

‡ The Dublin Med. Press, Dec. 10, 1845.

§ Jan. 1846, p. 64.



Sometimes his difficulty of articulation was so great that he asked for paper to communicate his ideas. Dr. Ruschenberger states that the symptoms and death were undoubtedly caused by the pressure of the aneurismal tumour, which seemed to be central, and not to press more on one side than the other.

3. *Ligature of Arteries*.—Our preceding volumes contain an account of several interesting cases in which these operations were resorted to, and our second volume (p. 209) a more general report on ligature of the *subclaviu*m; we propose to lay before our readers the particulars which have been brought before the profession on ligature of the *iliac* arteries since that Report was made.

4. *Cases of Ligature of the External Iliac*.—1st. Mr. Harrison reported a case, in 1845, of femoral aneurism, in which he performed this operation.\* Symptoms of tetanus set in on the fifth day, and the patient died at the expiration of the seventh day. A peculiar double pulsation was heard in that part of the tumour which extended above Poupart's ligament, but was not distinguishable a short distance below. It is suggested this might have been due to the integrity of the external iliac, and the pressure of the aneurismal sac on the outer side of that vessel. The aneurismal sac appeared to have been formed at two separate periods; one portion, immediately leading from the femoral artery, was composed, apparently, of a dilatation of the proper coats of the vessel, was of the size of a small orange, and communicated by an irregular opening with the larger sac. In this latter portion of the tumour the arterial tunics could no longer be traced; but its walls appeared to be formed by condensed cellular membrane externally; and the deposit of successive layers of fibrin within. Mr. Harrison remarks that the larger sac would result from the giving way of the true aneurism, and probably was formed at a period when the tumour began to increase rapidly, three or four weeks previous to the operation.

2d. A case was reported by John Cooper, Esq., of the Liverpool Infirmary, who tied the external iliac most successfully for a large inguinal aneurism.†

3d. A most interesting case of femoral aneurism, and of the application of a ligature to the external iliac, has also been detailed by Dr. William Mouro, surgeon to the Dundee Royal Infirmary.‡ The tumour was of the size of a turkey's egg, situated at the top of the left thigh. The operation was performed on the 31st of January, was borne with great firmness, and appeared to be quite successful. Everything progressed favourably for three weeks; but on the 21st of February restlessness occurred, with pain in the abdomen and in the tumour, and an erythematous blush over it. On the 25th all the symptoms were aggravated, the inflammation having extended all over the top of the thigh and hip. The wound, which had closed to about half an inch, lost its healthy appearance, and a good deal of bloody serous discharge followed. On the 28th, although better, from the remedies employed, after passing a good night he said he felt as if something had given way at the top of the thigh. Blood was found to be issuing from the wound. The tumour increased in size, and assumed a livid hue. On the 2d of March blood was found issuing from the wound with considerable force, but not in jets. On introducing the finger into the wound it passed readily to where the artery was tied, and the ligature was found still firmly attached. Between this and the 12th of March repeated hemorrhages occurred, the patient becoming gradually weaker. The aneurismal tumour suppurated and sloughed, and the original wound gave way throughout its whole extent. Death took place on the 12th. On post-mortem examination the external iliac was found to be impervious, and much contracted, containing a firm coagulum, from where the internal iliac is given off to the point of deligation. About a third of an inch above and below this point the vessel was surrounded and firmly closed by coagulable lymph; below this, and as far as the seat of the aneurism, it was contracted, impervious, and contained coagulated blood. On the outer side of the common femoral an opening was discovered, about a quarter of an inch in length, having ragged edges, and communicating directly with a small digital-looking cavity, situated on the inner side of the ulcer. The profunda was given off at little more than an inch below Poupart's ligament,

\* London Med. Gaz., Oct. 1845, p. 970.

† Lancet, June 13, 1846, p. 647.

‡ The Edin. Med. and Surg. Journ., April 1, 1846, p. 269.

instead of two inches, as usual; the superficial femoral and circumflex arteries were fully distended with the injection employed, and the latter palpably larger than natural.

Dr. Monro remarks that the case is interesting in many points of view, but especially in respect to its fatal termination and the source of the hemorrhage. There cannot be a doubt but that the ligature was most satisfactorily applied to the external iliac, and that, for the time, all circulation through the aneurism was completely stopped; nor can there be a doubt that for the first three weeks a very different result might with confidence have been anticipated, everything having progressed most favourably until the twenty-second day after the operation, when some swelling and redness were observed over the tumour; but no pulsation was then, or indeed at any future period, felt. The inflammatory symptoms did not for some time excite much apprehension, for it was both his own opinion and the opinion of others, that the sac would probably suppurate, and thus get rid of the tumour by a shorter, although a more troublesome and painful process than that of absorption. It was only on the 28th of February, twenty-nine days after the operation, that any apprehensions of serious hemorrhage were entertained. At this time great doubt and uncertainty prevailed as to the source of the hemorrhage. Ulceration of the vessel on the cardiac side of the ligature being generally the cause of such effusions, especially so long after the operation, was suspected. On the 2d of March, however, this was satisfactorily found not to be the case, for, on examination with the finger, the vessel, both above and below the ligature, was felt to be firm, and quite free from any pulsation; while a sinus was detected, leading downwards, and communicating with the aneurismal sac, showing that it was from this quarter the blood had proceeded, and that the sac, having received a supply of blood from some source or other, had burst upwards, and discharged it by the external wound: but by what channel it had reached the aneurism was still a problem difficult of solution.

The absence of all pulsation in the tumour, and, when the hemorrhages took place, the flow of the blood in a continuous stream, without the usual arterial jet, confirm Dr. Monro in the opinion that the blood passed from the branches of the internal iliac into those of the profunda, retrograded into the common femoral, and thence into the sac, according to the second of the channels pointed out by Hodgson in his valuable treatise on diseases of arteries.

Being satisfied that the aneurismal sac was supplied in this manner, it would appear that two operations might have been undertaken to arrest the hemorrhage—1st, tying the common femoral immediately above its bifurcation: or, 2d, securing the common iliac. The former was quite impracticable, in consequence of the swelling, inflammation, and sloughing which existed at the top of the thigh; but Dr. Monro regrets that the latter, the tying the common iliac, was not adopted, agreeably to what he urged at the consultation on the 2d of March. Had this been done, an additional chance of life would have been given to the patient: for when the blood again broke forth on the 12th, no time was afforded for operation, as he died within four hours from the attack, notwithstanding that all further effusion was speedily and permanently arrested.

4th. Mr. Kidd,\* of the Glenarm Dispensary, describes another case of aneurism at the origin of the femoral artery, in a young woman aged 22, resulting from a blow received five years previously. The external iliac was tied in this instance with success, and Mr. Guy, of the Royal Free Hospital, has also performed successfully the same operation for a similar disease.†

5th. The external iliac was tied, at the Cheltenham Hospital, for a double aneurism of the femoral and popliteal arteries: the patient died on the 29th day afterwards from mortification of the limb. It was subsequently ascertained that at the lower part of the sac the femoral artery divided into two branches of equal size; one communicated with the sac of the femoral aneurism, the other ran over the sac, and communicated with the popliteal aneurism, which had been destroyed by sloughing ‡

\* Dublin Med. Press, Jan. 21, 1846.

† Lancet, May 2, 1846, p. 502.

‡ Lancet, July 25, p. 90.

6th. Mr. Fowler, of the Cheltenham Hospital, tied the external iliac for aneurism of the femoral and popliteal arteries in a very unfavorable subject, death occurring twenty-nine days afterwards, the foot having mortified, and a large slough formed on the popliteal space.\*

7th. 8th. 9th. Mr. Crosse, of the Norwich Hospital, also records three cases of inguinal aneurism, for which this artery was tied successfully. He comments on Malgaigne's assertion that only four cases of the kind have been successfully operated upon in Paris, and remarks that more than a hundred examples of ligature of the external iliac have been placed on record. Velpeau states that he noted 71, and found only 18 deaths, and Mr. Crosse remarks that without doubt the unpublished cases are much more numerous.†

Mr. Crosse assisted in the first of these operations, which was performed by Mr. Bond in 1818.

5. *Statistics of Ligature of the Iliac Arteries.*—The "American Journal of the Medical Sciences"‡ contains an article on the entire subject, with a "table showing the mortality following the operation of tying the iliac arteries," drawn up by Dr. S. W. Norris, upon the same plan as a similar table relating to the subclavian arteries, by the same physician, recorded in our second volume (p. 209). Dr. Norris remarks, that the actual results of this operation are no doubt less favourable than they appear to be, unfortunate cases being less frequently reported than successful ones: the table comprises 118 cases.

*Mortality.*—85 cases recovered, 33 died; 3 of the former suffered amputation for gangrene of the limb.

*Sex.*—Of 113 cases, 107 were males, 6 females; of the latter, 5 laboured under aneurism, and 1 had secondary hemorrhage.

*Right or left side.*—Of 79 cases, 44 were on the right, 35 on the left side.

*Age.*—Of 99 cases, 4 were under 20 years, 23 between 20 and 30 years, 32 between 30 and 40 years, 25 between 40 and 50 years, 11 between 50 and 60 years, 3 between 60 and 70 years, 1 above 70 years.

*Disease or injury.*—97 cases were done for the cure of aneurisms, 18 in consequence of wounds or secondary hemorrhages, and 3 for the cure of varicose aneurisms. In 4 of the 97 cases of aneurism, that disease existed simultaneously in both the ham and the front of the thigh, and in 3 of these the operation succeeded in curing both tumours.

*Period at which the ligature separated.*—This is noted in 78 cases: in 44 of which the ligature came away before the 20th day; in 24, between the 20th and 30th days; in 7, between the 30th and 40th days; and in 3, beyond the 40th. The earliest period at which the ligature came away was the 10th day, and the longest time to which it remained was the 62d day.

*Return of pulsation in the tumour after the application of the ligature.*—This occurred in 9 cases. In one of these evident pulsation was noticed in the sac on the 5th day, which gradually ceased at the end of 10 or 12 days, the patient recovering. In the 2d case, pulsation returned in the tumour more than two months after the operation, and after a time ceased. In the 3d, aneurisms existed both in the popliteal and inguinal regions. Pulsation in the ham entirely ceased upon the application of the ligature, but continued, though feebly, in the inguinal tumour; both aneurisms were ultimately cured. In the 4th, pulsation reappeared, and remained till the 44th day, the patient recovering. In the 5th, slight pulsation was observed a few hours after the operation, and on the following day was so considerable that compression was made on the artery, and kept up so as to arrest it, the cure being complete. In the 6th, which was a varicose inguinal aneurism, the circulation through the tumour was observed to have returned on the 3d day, and the patient died, after repeated hemorrhages, on the 54th day. In the 7th, slight pulsation was noticed on the day following the operation, and the patient died on the 5th day of hemorrhage. In the 8th, both femoral and popliteal aneurism existed. On the day after the operation both tumours were solid: no pulsation was perceived in the ham, but a slight tremulous motion was noticed in the

\* Lancet, July 25, 1846.

† Prov. Med. and Surg. Journ., Aug. 12, 1846.

‡ Jan. 1847, p. 13.



groin. From this period pulsation increased in the groin, and after a few days returned in the ham also, where, however, it soon entirely ceased. At the date of the report of the case (about six months after the ligation of the vessel) it continued in the groin, though very feebly. In the 9th, the operation was done in the month of May, and the patient discharged cured in August, but was readmitted in the following November, with a return of pulsation in the tumour. Pressure was employed for two months, after which he was again looked upon as cured. In Nov., 1841, a recurrence of pulsation was again noticed. In Jan., 1842, all pulsation had ceased, but the tumour had increased. In Jan., 1843, it became stationary, and some time after began to diminish in size, and so continued to do till July of the same year, when he died of phthisis. On post-mortem examination, the tumour was found to be connected with the superficial femoral artery immediately below its origin, was of the size of a full-grown fetal head, and perfectly solid.

*Hæmorrhage after the operation.*—This is stated to have occurred in 14 cases: 7 died, and 7 were cured. In Nos. 1, 79, 94, and 114, it took place on the 5th day, and in all proved fatal. In the 4th and 5th cases, hæmorrhage once occurred in each, but the patients did well. In the 6th, a considerable quantity of arterial blood escaped from the wound from the 24th to the 30th day, which was believed to come from the inferior end of the artery, and was successfully arrested by compression. In the 7th, which was a case of hæmorrhage from the upper and outer part of the thigh, the bleeding continued after the external iliac had been secured, and a ligature was placed on the femoral, which restrained it. The limb afterwards mortified, and was amputated, the patient doing well. In the 8th case the hæmorrhage occurred at several intervals between the 24th and 43d days after the operation, when a second ligature was placed on the vessel higher up than the first, but without success. In the 9th, repeated hæmorrhages occurred after the 19th day, and the patient died. In the 10th, the artery was ligatured on the 22d of August, for hæmorrhage following amputation; on the 28th bleeding took place from the groin, which was restrained by pressure with a truss, and the patient cured. In the 11th, the vessel was also tied for hæmorrhage after amputation, ligature of the femoral having been first tried ineffectually. On the day after the operation there was a slight return, which was arrested by pressure. In the 12th case, which was one of varicose aneurism, it took place on the 40th day after the application of the ligature, from the inferior end of the wound. On the 43d day there was another frightful return of it, when the aneurismal tumour was laid open with a view of tying all the bleeding vessels: the loss of blood when this was done, was such as to make the operator fear the man would die on the table: he, however, lived 11 days. In the 13th, the artery was tied to arrest hæmorrhage from a stump, and more than 6 weeks afterwards, in consequence of a return of bleeding, it was again secured higher up than at first, and the patient cured. In the 14th, it occurred on the 17th day, and proved fatal.

*Suppuration of the sac.*—In ten cases the tumour is stated to have suppurated, all of which did well. In one of these the integuments were in a state of mortification at the time of the operation, and in the twenty-third day after it an incision was made into the tumour, and its contents evacuated. In another, the tumour, which is stated to have been of "enormous size," suppurated, and was punctured on the 25th of March. On the 31st of March and 2d of April, hæmorrhage occurred, and a fruitless effort was made to take up the profunda. On the 12th the bleeding was renewed, and the actual cautery was applied. On the 14th, "apprehensive of another hæmorrhage," an effort was made to tie the internal circumflex without success, and the actual cautery was again resorted to. In a third, when the ligature had been applied close to the bifurcation of the common iliac, the tumour discharged itself through the wound on the twenty-first day, and in number 113, the same occurrence had taken place on the twenty-ninth day.

*Gangrene of the limb.*—This occurred in sixteen out of 118 cases: in three of which it took place after amputation, and twelve died. In one case, the artery was tied on the 22d of January, mortification followed, which extended to the thigh, and on the 9th of February amputation was done close to the trochanter, which occurred in 1837, was an aneurism of the external iliac, which extended

In a second, the ligature was applied on the 27th of August, and the limb was amputated September 26th. In both these cases the vessel was secured to restrain hemorrhage. In the third case, the operation was done for femoral aneurism on the 20th of February. The ligature separated on the twenty-second day; and about a week after this occurred gangrene was observed in the toe, and gradually extended up to within a short distance of the knee, where the limb was removed. These amputations were all successful. In one instance, slight sloughing of the sole of the foot occurred from a bottle of hot water applied to the part.

*Cause of Death.*—Of the 118 cases, 33 died. Of these, six died from hemorrhage; three from sloughing of the sac; thirteen from mortification of the limb; one from the bursting of an aneurism of the aorta at its bifurcation, ten weeks and six days after the operation: two, on the third and fifth days, from prostration; two of peritonitis; two of tetanus; one, on the eleventh day, of some affection of the chest—probably diseased heart; one, on the second day, of delirium tremens; one of diffuse inflammation; and in one the cause is not noted.

*Difficulties of and accidents during the operation.*—In two instances the peritoneum was wounded in the operation. Both patients recovered. In one the sac was accidentally wounded after the ligature was applied. In one, a vein (the circumflex ilii) was a source of much embarrassment to the operator, who gives, with his case, a plate representing it.

*Mistakes in diagnosis.*—In four of the cases given in the table, the tumours had been mistaken for abscesses, and opened previous to the operation. Of these none recovered. In No. 106 the aneurism, which followed a gun-shot wound, was supposed to arise from a wound of the femoral. Upon examination, it was found that the ball did not pierce the fascia lata, but had passed altogether in the subcutaneous fat, and that the only vessel wounded was a superficial branch of the femoral artery, which was divided close under Poupart's ligament, and nearly an inch from the main trunk. (Mr. Seton's case, Abstract, vol. ii, p. 118.)

Mr. Fergusson\* mentions that he has seen "a most experienced and judicious surgeon cut through the parietes of the abdomen, with the intention of tying the external iliac artery, for a supposed aneurism where none existed." This case is well calculated to show the difficulty of diagnosis which is sometimes met with. The tumour, which was stated to have followed a mis-step, made some eight months before the patient presenting himself for examination, was situated in the right iliac region, in a man aged 54. It was tense, pulsated obscurely throughout its whole extent, and offered a distinct bellows-sound upon the application of the stethoscope. Believing that an aneurism existed, Mr. S. made an incision into the abdomen, six inches in length, with the intention of securing the external or common iliac, but when exposed, the tumour was found to be composed of a solid cerebriform mass, and was taken away entire. Seven days afterwards the patient died; and on dissection, a chain of tumours, similar in nature, was found surrounding the great vessels on both sides.

*Internal iliac artery.*—Dr. Norris is aware of only seven instances in which this vessel has been ligatured. These were by Stevens, Atkinson, Thomas, White, Arendt, Mott, and J. K. Rodgers. Of these, three died and four were cured. In all, the operation was done for the cure of aneurisms; and in one (Mott's), although the peritoneum was opened in the efforts to separate it from the parts beneath, yet the patient did well.

*Common iliac artery.*—Fifteen cases are recorded in which the operation of tying the iliac has been performed. The first case in which it was done, was that of a gun-shot wound, in 1812, by Dr. W. Gibson. The patient died from peritoneal inflammation and secondary hemorrhage, on the thirteenth day. The second case was that of Dr. Mott, for aneurism, in 1827, and was fully successful. The third was in 1828, by Mr. Crampton, also for aneurism, and was unsuccessful, the patient dying on the fourth day from hemorrhage. The fourth case was that of a boy aged eight, in which the common iliac was tied by Mr. Liston, in 1829, in consequence of secondary hemorrhage after amputation, and was unsuccessful. The fifth was the case of a lady operated on, in 1833, by Mr. Guthrie, for a tumour on the right nates, as large as an adult head, which presented so decidedly the

\* Elements of Surgery, p. 135. Amer. edit., 1845.

characters of aneurism, that it was believed to be so by Mr. Guthrie, as well as by Sir A. Cooper, and others, who examined it. Pulsation was manifest in every part of it: and, "on putting the ear to it, the whizzing sound attendant on the flowing of blood into an aneurism, could be very decidedly heard." Diminution of the tumour to the extent of one-half followed, and recovery from the operation was complete. Five months afterwards the tumour again enlarged, and she gradually sunk. On post-mortem examination, eight months after the operation, the arteries were found to be perfectly healthy, and the tumour to consist of cerebri-form matter. The sixth was by Mr. Salomon, at St. Petersburg, in 1837. The cure was deemed perfect, the tumour almost disappeared, and the free use of the limb was restored. Ten months afterwards the patient is stated to have taken cold, and had an abscess form upon the affected side, which was opened just below Poupart's ligament. He died shortly after, worn out by the suppuration. The seventh case was that of Mr. Syme, in 1838, for aneurism, and was unsuccessful, the patient dying on the fourth day. The eighth was by Degnise, of Paris, in 1840, and proved successful, despite three serious accidents which happened during its performance, viz., the wounding of the sac, the giving way of the ligature, and the wounding of the femoral vein in the taking up of the artery of that name, which was done at the same time to prevent secondary hemorrhage. The ninth was in a case of aneurism, which occurred to Dr. Post, of New York, in 1840. The symptoms here were deceptive; and it being judged that deep fluctuation was present, an explorative incision was made into it. On the following night there was a sudden gush of arterial blood, which was arrested by compression, and the day after, a ligature was applied to the common iliac by cutting through the peritoneum, the tumour extending so high up that it was thought impracticable to expose the vessel without it. The patient sunk twenty-four hours after the operation from exhaustion and loss of blood. The tenth case was that of a female child, aged two months, in whom the artery was secured by the late Dr. Bushe, on account of a large aneurism by anastomosis of the left labium. The child lived five weeks. In the eleventh case the ligature was applied by Dr. Perogoff, on account of hemorrhage after the removal of a ligature of the external iliac, which had been applied for the cure of aneurism. In exposing the vessel, the peritoneum, which was adherent, was torn through. The wound became gangrenous; and on the eleventh day, fecal matter was discharged through it. On the fourteenth day hemorrhage occurred, and the patient died twenty-four hours afterwards. The twelfth was that of Dr. Penn, at the Pennsylvania Hospital. The operation was done in August, 1842. The tumour, which extended from three inches below to the same distance above Poupart's ligament, had become, five months after the operation, reduced to the size of a filbert, and was perfectly hard. On the 13th of November, 1843, he presented himself for re-admission at the hospital, and stated that, after being last seen, he had returned to his employment, that of loading boats with stone, and had continued perfectly well and able to work up to within two weeks, when his attention was directed to a reappearance of his tumour. Upon examination it was found to be of the size of a small orange, was soft, entirely free from pulsation, presenting evident marks of fluctuation, and the skin covering it discoloured. A few days afterwards an opening took place in it, and was followed by considerable hemorrhage, which was arrested by compression. Several recurrences of this followed, and he died on the 24th. The thirteenth case was an aneurism operated on by Mr. R. Hey, in 1843, and was successful. The fourteenth is the interesting case of supposed aneurism which has been lately published by Mr. Stanley. On applying the ear over the abdominal parietes, a bellows-sound in the tumour was plainly recognized. Compression applied to the femoral artery below the tumour produced enlargement of it, but when made upon the aorta all pulsation was arrested: after the application of the ligature to the common iliac, pulsation ceased. Death occurred on the third day from peritonitis. Upon dissection, the arteries were found to have no connexion with the tumour, which was composed of medullary matter. Tumours of a similar character were found in heart and lungs, and one of the size of an orange occupied the middle and inner side of the arm, which during life was observed to be free from pulsation or pain, and was said to have existed for several years. The fifteenth and sixteenth cases are those which have been published by Dr. Garviso, of Monte Video. The first,



from the pubis to the umbilicus, and was of the size of an adult's head. An eschar which had formed on the tumour, had commenced to separate, and gave rise to abundant hemorrhage immediately previous to the performance of the operation. From the size and situation of the tumour, the cavity of the peritoneum was necessarily opened. Death followed in four hours. The second of his cases (also an aneurism) was in 1843. The incision was made with a view of securing the external iliac, but the disease was found to extend so high up that the common trunk was tied. The ligature separated on the thirty-sixth day, and the patient recovered. Total, 16 cases, of which eight may be said to have been successful, and eight died.

The interesting paper by Dr. Norris has enabled us to bring the subject of ligation of the iliac arteries down to the present year, and will thus permit our readers more fully to comprehend the significance of such cases and observations as may appear, and the value of those improvements which may be suggested in our future volumes.

6. *The Cure of Aneurism by Galvanism.*—In Dr. Bellingham's papers, to which we have several times had occasion to refer, this subject is treated of pretty fully. It appears that the earliest trial of this method is related in the "Transactions of the Medical and Physical Society of Calcutta," and that the application of galvanism was suggested by Dr. W. B. O'Shaughnessy, who undertook to conduct the experiment. The case was one of aortic aneurism, and the experiment failed. It further appears that at the meeting of the British Association, at Cork, in 1843, Dr. Bevan suggested "that the coagulation of the blood during the employment of compression, might be assisted and promoted by passing slight galvanic shocks through the sac." M. Petrequin employed this method in two cases in 1845, which we have recorded in vol. iii. (p. 111). Without being aware of Mr. Bevan's suggestion, or of M. Petrequin's cases, Dr. Bellingham employed galvano-puncture in a case in February, 1846,\* but in this particular instance little effect was produced by one application, and the patient died of erysipelas before it could be repeated. In this experiment, a portion of the sciatic nerve was wounded by the acupuncture needle, and produced severe pain in the heel, and numbness of the limb, which continued. In the "Dublin Quarterly Journal," for November, 1846, Mr. Hamilton has related a case of carotid aneurism, in which he employed the remedy. The application of the galvanic current effected completely the coagulation of the blood in the sac, although the remedy proved unsuccessful, and the patient died of the disease.

The mode in which galvanism acts in causing the coagulation of the blood in an aneurismal sac, is thus explained by Dr. Apjohn:

"When the circuit of a battery of moderate strength is completed through the serum of blood removed from the body, its albumen is coagulated at the positive pole; and there can be little doubt, that if the blood contained in an aneurismal sac were subjected to the same influence, its serum would undergo a similar change. As to the cause of the coagulation, it appears to be due to the decomposition, or, as Mr. Faraday terms it, the *electrolysis* of the salts of the blood, and the action on the serum of the acids developed at the anode or positive pole. The coagulation of the albumen is not, therefore, a direct consequence of the galvanic current, but arises from the analytic action exercised by it upon the saline constituents of the blood.

"If the battery is very powerful, the effect upon the serum may extend throughout the entire of the space separating the poles. But even in such a case, the coagulation is not, Dr. Apjohn believes, due to any specific agency, exerted by what is called the galvanic current, but to the elevated temperature produced along the line of its trajet."

The coagulum developed by the action of the galvanic current upon blood would, therefore, appear to consist of *albumen*, derived from the decomposition of its serum; such a coagulum will be necessarily loose and flocculent, and altogether different from that which forms in an aneurismal sac under ordinary circumstances.

\* Dublin Med. Press, Nov. 18, 1846, p. 322.

In order that the albumen of the serum of the blood contained in an aneurismal sac may be coagulated, it would seem to be essential that the blood should be retained in it for a sufficient length of time to be acted on by the galvanic current, consequently compression ought to be made upon the artery, above and below the sac during the operation; if this precaution is not taken, the blood will pass through the sac too rapidly to permit of its decomposition.

It appears to Dr. Bellingham that a coagulum might be developed from another source, when a galvanic current is conducted along needles introduced into an aneurismal sac: thus after the decomposition of the serum contained in the sac, and the separation of its albumen from the other constituents, it is not unreasonable to suppose that the fibrine and red globules of the same portion of blood (being then in some measure set free), might form a distinct coagulum: but of this we have no proof, and such a result could hardly be expected, unless the galvanic current had been maintained for a sufficient length of time to coagulate completely the albumen of the serum contained in the sac. Even under these circumstances the coagulum would be loose and soft, and have little analogy with the fibrinous layers found in aneurisms of some standing.

It would appear, therefore, Dr. Bellingham remarks, improbable that a coagulum sufficiently firm to resist the current of blood in the main arteries of a limb, can be developed under any circumstances by the agency of the galvanic current, although, by compressing the arteries above and below the sac during the operation, the pulsation may be made to cease either immediately or soon after its application; or the galvano-puncture may excite inflammation in the sac or parts about it; and if these views be correct, a galvanic battery of moderate strength is to be preferred to a more powerful one, as less likely to occasion inflammation: and the application ought always to be combined with compression upon the artery above and below the sac. On the whole, it appears, this surgeon thinks, that much can never be expected from galvano-puncture as an agent in the cure of aneurism; it is doubtful if the current of a battery of moderate strength, however long continued, can develop a coagulum sufficiently firm to produce even the effects mentioned; and the employment of a powerful battery is not without risk, if the aneurismal sac is of considerable size, or springs from a large artery. In addition, it is difficult to isolate completely the shaft of the acupuncture needles; the substance used for this purpose is either detached in the act of introducing them, or it is softened when the galvanic current is completed; hence the tissues, through which the needles pass, are acted on, and the strength of the current is necessarily wasted.

In a more recent memoir,\* however, M. Petrequin affirms that the curability of aneurism by galvanism is fully demonstrated. In treating of the theory of its action, he distinguishes—1st, the electric action of the pile on the nerves: 2d, the calorific action; 3d, the power of decomposing fluids. This distinction, he states, is of great importance in pathology. Although the whole, taken together, constitute the galvanic influence, it is the last mentioned which accomplishes the effect in an aneurismal sac. The first effect tends to exhaust its nervous energy: and the second excites the action of the living tissues, cauterizes them, and may produce gangrene. The object should, therefore, be to augment the decomposing influence, and to weaken the calorific and nervous influences. This is effected, according to the galvanic laws, by isolating the needles, by producing a continuous current, and avoiding shocks, and by increasing the number and diminishing the size of the plates. By attending to these circumstances, M. Petrequin succeeded in producing a very rapid coagulation of the blood with scarcely any electric pains, and only the slightest degree of cauterization.

The proposal for the employment of galvanism appears to be gaining credit on the Continent. The editor of the "*Bulletin de Thérapeutique*" remarks that it is more innocent and more certain than any method hitherto employed; and the editor of the "*Revue Médicale*" affirms that the whole of the experiments tend to inspire us with confidence, that the new method will soon manifest an unquestionable superiority in the treatment of aneurism.

Dr. Bertani, in a letter to Dr. Petrequin, has reported a case of enormous varices,

\* *Revue Méd.*, Nov. 1846, p. 340.

extending from the feet to the groin, cured by galvano-puncture. We are not quite clear whether this is an additional case or the one detailed in our extracts, as having been operated upon by Dr. Malani, (Art. 76, p. 110.)

## § II.—*Injuries and Diseases of the Integuments, &c.*

7. *Treatment of Contracted Cicatrices.*—The cure of several cases by Mr. Parker is recorded in our extracts (vol. iii. Art. 47). and subcutaneous division has been described as often successful in removing cicatrices about the face, neck, anus, and fingers.\* The operation is performed with a fine, narrow, sickle-shaped knife. At any convenient point of the cicatrix the neighbouring healthy skin is punctured, the knife is passed beneath the base of the cicatrix, which is then divided as freely as possible, without injuring the skin. In cases where the skin and subcutaneous tissue have become adherent to subjacent periosteum, the knife is passed flatly as near the bone as possible, and division effected to any extent which may be necessary. If the cicatrix be very large, it may be necessary to make more than one puncture in the skin. The cicatrix only should be divided, not any of the surrounding healthy cellular tissue. If bleeding beneath the skin come on, charpie and compression must be applied, and the part surrounded by a bandage. This general description of the operation will apply to all cases in which it may be necessary to remedy distortions of the mouth, nose, eyelids, neck, fingers, &c.

8. *Burns.*—In our second volume we gave an account of M. Jobert's plan of treating burns by the application of cold (p. 220). The "*Gazette des Hôpitaux*" has lately reverted to this subject.† It appears that M. Jobert continues this simple practice with the most fortunate results. It consists in covering the parts affected with porous linen, having a slight coating of cerate, and placing bladders filled with cold water above it, which are kept there night and day, changing the water as soon as its temperature begins to rise. A case is given of an extensive and deep scald with boiling water. The application of the cold water produced pain for a few moments, but after this every painful sensation subsided, reaction was arrested, and the comfort of the patient was beyond anything that could be expected after so extensive an injury. A triple advantage is said to be derived from this treatment; it prevents congestion, pain, and inflammation.

The application of cold water, and even of ice, is not the only means resorted to by M. Jobert. As soon as ever the patient can bear it he employs the cold bath; and he makes the following practical remarks: "When a cold bath is taken, for a few minutes only, and the patient has been placed in bed, it occasions a very violent reaction, the intensity of which is almost in exact proportion to the low degree of temperature; but if, after the bath, the application of cold to the part be continued, and if the patient remain for a quarter or half an hour, instead of a few minutes, in the bath, the sufferings of the patient are alleviated, and scarcely the slightest unfavourable circumstance occurs."

The employment of ice is not only indicated immediately after the occurrence of the accident, but at a more advanced period, when suppuration is established; this plan has the advantage of diminishing the inflammation and suppuration, and of preventing the formation of irregular contractions and cicatrices, so frequently the consequence of burns. This sedative treatment may be aided by the administration of opiates internally.

While on this subject—M. Gosselin has been treating wounds by the continued irrigation of cold water. In some severe cases no inflammatory action occurred, and the patients left the hospital in a few days perfectly cured. In a case of severe and extensive contused and lacerated wound of the foot, the patient was subjected to the continued irrigation of cold water. No inflammatory symptom set itself up either around the wound or in the foot; mortified portions were thrown off, there was no affection of the inguinal glands, but little febrile reaction, and the patient's condition was favourable throughout.

The editor of the "*Gazette des Hôpitaux*" remarks that these facts confirm the propriety of a proposal made by Malgaigne some years ago, viz., that cold irriga-

\* The Brit. and For. Med. Rev., Jan., 1846, p. 290.

† Oct. 31, 1846.



tions constitute an excellent antiphlogistic method of treatment, when employed for wounds and inflammations not very deeply seated; that they are particularly adapted for the hands and feet, and for wounds with firearms. M. Malgaigne gives the preference to continued cold irrigation over every other method of treatment. For other wounds he prefers intermittent irrigations. Wounds caused by the bites of animals, and by the limbs coming into contact with carriage wheels, being attended with contusion, and the fracture of bones being generally comminuted, come into the same category as wounds with firearms—M. Gosselin accordingly prefers continued to intermittent irrigation in the treatment of such accidents.\*

This practice, so opposed to that adopted in our own country, is advocated in several of the continental journals.† In burns the application of the cold is continued until the separation of the eschars; if very extensive, the patient, in the first place, is rolled in a sheet held by two men, and then plunged into a cold bath, and this course is frequently repeated. It is believed that the extent of sloughing is greatly diminished, the extent of destruction of the injured parts not depending on the severity of the original burn, but on the intensity of the reaction, and the cold applications subduing this reaction.

The editor of the "Monthly Journal"‡ believes that in very extensive burns this treatment will invariably be found inapplicable. He considers that coldness of the surface and collapse, with pulselessness, decidedly contraindicate it; but in smaller burns it is worthy of a trial. He maintains what we believe to be the general opinion in this country, that the extent of the sloughing depends entirely on the severity of the original burn. The editor also remarks on the application of ice to wounds, that its indiscriminate and continued use is frequently productive of mischief. In a large hospital, in the north of Germany, where it was resorted to for wounds, contusions, and simple and compound fractures, fatal cases of phlebitis and erysipelas occurred with greater frequency than he had ever seen elsewhere; and he disapproves *in toto* of M. Bauden's practice of adding salt to the ice, so as to reduce the temperature to 15° below zero.

9. *Mode of Curing obstinate old Ulcers.*—Dr. Bresciani de Borsa§ states that, for very old ulcers, especially those of the leg, which resist every other method of treatment, he has obtained sound cicatrization, by instituting, by means of caustic potass, a new ulcer in the vicinity. In a piece of adhesive plaster a hole is made, somewhat smaller in size than the artificial ulcer is to be, it is then applied at one or two fingers' breadth from the old sore; caustic potass is rubbed on this space until an eschar is formed; and during the consequent inflammatory and suppurative processes, the old solution of continuity, which had so obstinately resisted treatment, closes up, and the cicatrix, in general, continues sound.

If the healed ulcers had resulted from a disordered constitution, to the appropriate internal treatment, he adds either an issue in some usual spot, or places a small portion of wax in the artificial ulcer itself, when nearly healed, so as to convert it into a common issue, which contributes much to efficient treatment. By which prudential precaution he has never seen any mischief produced in the constitution of those who had long been subject to obstinate ulcers. If the ulcer was produced by a traumatic cause, after it has become healed, the artificial one may also be cicatrized as soon as possible, without any injury resulting. More than a hundred cases have been cured in this manner; and many instances of cure have occurred in the hospital of ulcers of twenty or thirty years' standing.

10. *Creosote in Obstinate Ulcers.*—The same physician remarks that this application for indolent and obstinate ulcers seems to be going out of use, but he does not know why, for in his own practice he finds it so useful that he calls it a sovereign remedy. The formula is, Creosote gtt. vj, Aq. font.  $\zeta$ iv, M.; increasing the strength gradually to 10 or 20 drops.|| A change in the pathological condition of old, foul, indolent ulcers is brought about with great celerity. It is certainly the best flesh-producer known in surgery, in these morbid affections. Has the remedy some specific action on the capillaries? for in even twenty hours a foul surface may be

\* Gaz. des Hôpit., Sept. 19, 1846.

† Jan., 1847.

|| Gaz. Méd., Dec. 20, 1845.

‡ Ann. de Thérap., May, 1846.

§ Medico-Chirurg. Review, April, 1846.

seen covered by luxuriant granulations; and old, indolent ulcers become benign and active. The application must always be reserved for old and indolent ulcers; for if used in active, inflammatory, and painful ones, great mischief will result; and he believes it has fallen into disrepute because it has so frequently been prescribed in conditions which contraindicated its employment.

11. *Lupus*.—In the "Bulletin Général de Thérapentique," M. Payan, of Aix, endeavours to fix the attention of practitioners upon the importance of local treatment in the cure of this disease. In one case, after the employment of depuratives, antisyphilitics, antiscrofulous medicines, and other remedies, he obtained a cure by the application of acid nitrate of mercury alone. In a second case this was powerless, as was a caustic solution of chloride of gold, in consequence of the too superficial and transient action of these caustics; but Rousselot's arsenical paste, and powdered corrosive sublimate, applied pure to the morbid surfaces, effected a cure. M. Payan does not proscribe internal treatment. On the contrary, he thinks a generous mode of living, ioduret of iron, and especially ioduret of potassium, and perhaps cod-liver oil, may be most advantageously resorted to. But the combined employment of these general means should not make us lose sight of the fact that, independent of the constitutional modification which may prepare the way for a cure, there exists a local disease which must not be neglected, but must be met by an energetic topical treatment, consisting principally in the employment of well-selected caustics.

Mr. Gibbs, one of the pupils of the Newcastle Infirmary, reports a case of lupus,\* occurring in a man, aged twenty-six, of scrofulous appearance, but healthy family. The affection covered the greater part of the left cheek, upper lip, and nose, extending slightly to the right cheek. The ulcer was below the level of the surrounding skin, and had a dark, unhealthy, even surface. The discharge was fetid and sanious, but the patient did not complain of pain. The disease first appeared as a small pustule, in 1839. Various kinds of treatment were employed with little or no benefit, including mercurials, arsenic, iodine, and the whole range of tonics and alteratives. In August, 1845, ointment, containing naphtha, was ordered to the sore, with the internal use of cod's liver oil; under which treatment it gradually cicatrized. The tip of the nose was, however, destroyed, and a very slight ulceration, in the inside of the left nostril, continued up to April, 1846.—

Several cases, having all the characters of lupus, of many months' duration, have got well rapidly under our own eye, after a very few applications of the chloride of zinc paste; and in these instances we have been struck by the fact that the local application appeared to determine and to sustain the healing process, rather than any constitutional treatment to which the individuals were subjected.

### § III.—*Injuries and Diseases of the Muscles and Tendons.*

12. *Rupture of the Triceps Cruralis Muscle*.—Our extracts contain an article on this subject, by Mr. Grantham (46), which induces us to refer to a memoir published by M. Demarquai, in 1842, giving an account of all the cases he could collect of rupture of the tendon common to the rectus femoris and the two vasti, which has also been called the supra-rotular tendon. There were, at the time the memoir was published, 13 cases, in two of which the rupture occurred in both legs. Dr. Renouard has recorded a third case of the latter description.† A man, aged 59 years, struck his foot whilst running, and fell forwards. In the violent effort made to save himself he experienced great pain in both knees; an instant afterwards his legs folded under him, he fell, and could not raise himself.

When assistance arrived, his legs were strongly flexed, and there was great difficulty in extending them; but after this was effected he experienced great relief. He was taken to bed with his legs swollen; the skin became tense and shining from the first day, and on the following morning the legs were blue and yellow.

Two days after the accident, feeling no pain, the patient left his bed, and attempted to walk across his chamber with the aid of two canes; but he again fell, and was obliged to call for assistance to be lifted into bed. His medical attendant

\* Med. Times, July 4, 1846.

† Revue Méd., Sept. 1846, p. 55.

now extended the limbs, and put them into splints and bandages. After about two months' confinement, but little progress was made towards a cure, and he was removed to Paris. At this period Dr. Renouard found the tendon of the triceps femoralis ruptured just at its point of insertion in both legs. The superior extremity was separated from the patella about three centimeters by the contraction of the muscles. On completely extending the limbs, the patient sitting, and pushing the patella upwards with one hand, and the tendon downwards with the other, the distance to which they were separated was diminished one-half; but when the hands were withdrawn, the parts resumed their original position. The finger could be placed in the hollow which separated the tendon and the patella, and this space was larger in the left than in the right limb.

Sitting, or lying on an horizontal plane, the patient had no power whatever to raise the left, but he could raise the right leg a few centimeters above the level. He had the power of flexing the leg on the thigh, but no power of extension. On raising him by the shoulders he could not stand alone for one moment.

*Treatment.*—The indications were:—1st, to reunite the ruptured parts; 2d, to maintain them in contact; 3d, to attend to the general health. The uniting bandage, it is stated, failed to fulfil the first intention, since the tendon could not be kept in contact with the patella by means of it. For several reasons a suture would not answer. After exciting a great deal of pain and irritation it would certainly fail, owing to the powerful retraction of the muscle. The only plan was to maintain the limbs in a state of continued extension. This was effected in the right leg by means of a roller and two small splints placed on each side of the knee; in the left, which was the most severely injured, by means of a special apparatus, which allowed the limb to be uncovered daily to ascertain its state, and to employ aromatic and strengthening embrocations.

The right leg was left loose at the expiration of a month: the left leg required three months for a cure of the local symptoms. Five months and a half after the accident the patient walked well with crutches, and could even stand alone for a short time, and at the expiration of another month he walked with the assistance of a cane only, and the limb progressively recovered its strength.

Dr. Renouard makes the remark, that from the time that the patient was capable of extending his limb, and could stand upright, and move a few steps across his chamber, on requesting him to bend his leg, two cords were observed under the skin, proceeding from each superior angle of the patella, running parallel to each other, and losing themselves in the muscular flesh on each side of the ruptured tendon. They were at first very fine and slender and the whole width of the patella apart from each other; but they became strong and increased in size, by degrees, and by gradually approaching the median line, and ultimately they were separated by the space of only half a centimeter. When the limb was bent, a quadrilateral space was observed above the patella, into which the extremity of the finger could be placed, and the subcutaneous cords which bound it on each side might be felt. These cords had not acquired sufficient density to act completely as tendons until after the expiration of a year.

The union of tendons is believed to be generally effected either by coaptation of the divided parts, or by the aid of a new tissue formed between them. Nothing of the kind occurred in the above case; the ends of the divided tendon were never united at all: they remained divided, and their functions ceased. A tendinous cord of new formation was substituted in place of the original structure, and appeared to differ from it materially, and in nothing more than the length of time required for its complete formation.

In one of the cases collected by M. Demarquai, the patient died of apoplexy a year after the accident, and Dr. Martini found that the extremities of the ruptured tendon were united by means of "a very resistant fibrous tissue." Dr. Bouvier has also made the remark that "the formation of the new tendon is owing to the surrounding cellular tissue being first converted into a canal, and changing gradually into a solid cord of fibrous substance, which, without being exactly of the same nature as the tendon whose place it supplies, is perfectly competent to fulfil its functions."<sup>\*</sup>

\* *Mém. de l'Acad. de Méd.*, 1838, t. vii., p. 438.



13. *Myo-tenotomy*.<sup>\*</sup>—In an article on the indications and contra-indications for this operation, Dr. Neumann states that tenotomy has been much abused, particularly of late: and he has endeavoured to determine the cases in which purely mechanical means are sufficient to effect a cure. Dr. Neumann lays it down as a principle, that there is but one pathological condition which indicates myo-tenotomy, viz., *muscular retraction*. When this does not exist, the operation is never followed by the expected result. Muscular retraction generally manifests itself by a tension and hardness of the tendon, or even of the muscle, without the means of tracing in the retraction of the limb, or in the part to which it is attached, the cause of this muscular action. There are some muscles in which this preternatural tension cannot be felt, owing either to the position which they occupy, as in the cavity of the orbit, or to the smallness of their volume, which prevents its being detected through the surrounding parts. The retraction can then be detected only by the altered situation of the part, or by a derangement of its motions. Tenotomy is applicable only to *permanent* retractions, and never to *spasmodic* or *intermittent* retractions. The *retraction* of a muscle must never be confounded with its *shortening*. To convince ourselves of the importance of an error of this kind, it is only necessary to consider one of the affections for the relief of which the operation is resorted to—the *talipes equinus*. A sound man may voluntarily retract the gemelli muscles, so as to raise the heel to the height which it generally attains in this affection, accordingly there is no evidence that the tendon in this affection is shortened; it is only retracted, and tenotomy occasions this morbid retraction and rigidity of the tendinous fibres to disappear, without its being necessary to elongate the tendon. Moreover, great inconveniences would result from such an elongation: the patient might place his heel easily upon the ground; but as the tendon would be too long, there would be the greatest difficulty in raising his foot from the ground, and his step would be uncertain and defective. Dr. Neumann states, also, that it is necessary to distinguish the morbid retraction which is seated in the muscles from that which occurs in the aponeuroses, ligaments, or membranes, the latter never presenting conditions identical with those of the former, but consisting, on the contrary, in a *true shortening*. The author establishes two classes of the cases which require tenotomy—1st, those which he calls *general*, and which may develop themselves in all, or nearly all parts of the body; and, 2d, those which are *special*, or occur in certain parts only. The first class comprises paralysis and ankylosis, when attended with permanent retraction of the muscles: in the second class the author places strabismus, ptosis, stiff-neck, club-foot, and the like.

The author differs from M. Guerin in the important question, whether, when many muscles are retracted, they should be operated on at one and the same time, or at intervals. He considers that when the muscles belong to the same part, or to a particular articulation, as in deformities of the feet, they should all be divided at the same sitting; but there is always considerable reaction when many muscles belonging to different regions are divided at the same time. An interval of about eight days is necessary, according to the author, before a second operation in a different part of the body is undertaken; and at the expiration of three weeks the operation may be repeated, at the same site where the first trial has been unsuccessful.

Tenotomy should never be practiced, according to the author, on children under a year old, and we ought never to operate for strabismus under the age of eight or ten years, because the resources of nature frequently overcome this deformity. In club-foot the operation should never be performed before the age of 12 years, since a cure may sometimes be obtained by machinery and gymnastic exercises. Tenotomy may be performed with advantage until the age of 40, or even 60 years; but beyond this period the rigidity of the muscles supersedes the beneficial results of the operation.

Inflammation of a retracted articulation is a contra-indication to tenotomy. In fact, the retraction of the muscles, which should be the sole obstacle to the readjustment of the limb, indicates, on the contrary, in the case of inflammation, a deep-seated affection of the hard parts, and in those which appear the most favourable cases, relapses are always to be expected: *à fortiori*, when the surface of articulations presents large cicatrices adherent to the subjacent muscle, and when

<sup>\*</sup> Casper's Wochens., Nos. 4, 5, 1845.

the individual is the subject of particular inveterate diatheses, the operation is inadmissible.

As remarked by the editor of the "*Archives Générales*,"\* these cannot be accepted as established principles until they are confirmed by a much larger number of cases than are at present before the profession.

#### § IV.—*Injuries and Diseases of Bones.*

14. *Treatment of Fracture of the Clavicle.*—Two difficulties are met with in the treatment of this accident; the maintenance of the fragments of the bone immoveable, and the procuring a regular callus. Desault's bandage does not entirely fulfil these conditions, but M. Blandin is said to obtain them by rendering this apparatus immoveable with dextreine. Six cases have been treated by him at the Hôtel Dieu, and in one only, the patient being delirious from a wound of his head, was the success incomplete. In others, when the bandage was removed, it was difficult to point out the side upon which the fracture had occurred, no angle or projection whatever being visible. It might be supposed that an immoveable bandage of this kind would prove very irksome to the patient. It does not: for, owing to the fragments being maintained *in situ*, there is less suffering, and there is no necessity to renew or tighten the apparatus every day, as is generally the case: care is of course taken to guard the arm-pits and other parts which the stiff bandage would irritate, by means of compresses. In private practice M. Blandin makes the patient wear a rather tight flannel waistcoat, over which he applies the bandages; and with the skin thus protected, the most delicate females experience no inconvenience.

15. *Fracture of the Sacrum.*—Dr. A. H. David, of Montreal, records a case of fracture of the sacrum, which occurred at the fourth month of pregnancy by the patient falling down stairs. Delivery was rendered impossible, and the patient resisting the operation of craniotomy, death occurred. The bone was ascertained to have been broken in four pieces, two of which projected out of the usual line, and all were united by a firm callous band, which formed a considerable projection into the pelvis.†

#### § V.—*Spinal Affections.*

16. *Distortions of the Spinal Column.*—A work by Mr. James Coles‡ on this subject was published about two years since, and although the principle of treatment inculcated has been for some time before the profession, and has not been generally adopted, its advantages are insisted upon anew, and ably supported by facts and reasoning, and the interests of our readers, we think, will be consulted by making it a subject for this Report. Mr. Coles strongly insists that the cause of spinal curvature, as a primary disease, is constitutional debility, most frequently, if not always, of strumous origin, and that local debility is but a secondary cause. He denies that local influences can cause the disease when constitutional predisposition does not exist, and accordingly he attributes much less influence to stays, improper attitudes, want of exercise, schools, dress, and the habits of society, than do other surgeons; believing that, at most, they can only produce secondary effects. Attention is, however, drawn to the important distinction between primary and secondary distortion of the spinal column, the latter being produced by the local causes above referred to, and great mischief having arisen in practice from a want of this discrimination, inasmuch as the constitutional disease has been frequently aggravated by remedial measures applicable only to that which has a local origin.

All the cases of spinal distortion are referred to four varieties, the lateral, the anterior and the posterior curvatures, and the angular projection: and the circumstances which more especially facilitate the progress of the disease are two, the superincumbent weight of the body on the spine, and the fatigue and exhaustion occasioned by maintaining an erect position. The indications of treatment are three: 1st. To relieve the distorted spine of its superincumbent weight. 2d. To remove local active disease or local debility. 3d. To restore the general health.

\* Sept. 1846, p. 97.

† The Brit. Amer. Journ. of Med. and Physical Sciences.

‡ Spinal Affections, and the Prone System of Treating them, 1845.

Mr. Coles demonstrates the impracticability of fulfilling the first indication by any artificial contrivance whilst the body is in an erect position; it can only be effected by the recumbent position. This position may be supine, prone, or on either side, but there are insuperable objections to the supine and lateral positions. The inclined plane, so much adopted of late years, the patient lying on the back, is erroneous in principle as a remedy, and is attended with innumerable evils. The "facial-horizontal position," on a soft medium, as a feather-bed, appears to have been first recommended in a published essay by Mr. Bampfild, but the position had been previously adopted in practice by the late Dr. Verral, who invented the "prone couch." This couch, in its simplest form, consists of a board having an angle corresponding with the bend of the hips; it is placed on a sofa. It must be carefully fitted to the patient's size, and admit of easy variation in its angles.

The objections to the supine position are manifold and serious: 1. The injurious effects of pressure, not only upon the integuments covering the sacrum, trochanters, and other projecting bones, but also upon the bones themselves. The continued pressure upon the muscles also cannot fail to interfere very seriously with their restoration to health and power: nay, it may even lead to a very considerable absorption of their substance, and, as the flexors of the body are naturally more powerful than the extensors, much mischief may be caused by the slightest lesion of this sort; a confirmed stoop is a very frequent result of the prolonged use of the reclining-board. 2. The continued pressure of the thoracic viscera upon the spinal and sympathetic nerves, and upon the great blood-vessels that lie upon the anterior surface of the vertebral column, can scarcely fail to produce a certain amount of disturbance in the functions of innervation and circulation. Hence, probably, the headache, difficulty of breathing, palpitations of the heart, indigestion, obstinate constipation, weakness of the bladder, hemorrhoids, varicose state of the veins, and œdema of the legs, &c., which are not unfrequently observed in patients who have been long confined to the horizontal supine position. Besides these and similar ailments, such invalids often experience a marked impairment of vision, in consequence of the manner in which the rays of light fall upon the eye, and of their reflection from the white ceiling of the room, upon which the eye must necessarily rest during the greatest part of the time spent upon the plane.

The main object of Mr. Coles' work is to illustrate and establish the efficacy of the prone position. Its advantages are, that the muscles of the spine are not obstructed in their action, nor is their structure absorbed by pressure; that all the injurious effects produced by internal pressure of the viscera on the diseased spine and the adjacent parts are avoided; that excoriations and sloughings do not occur; the anterior surface of the body, from its yielding nature, bearing the weight of the frame without injury or inconvenience; that there is easy access to the diseased parts, and local remedies for active disease or local debility can be applied; that patients can maintain this position by night and by day with comfort to the feelings, improved appetite, and regularity of bowels; that whilst the patient reposes upon the horizontal or slightly sloping portion of the plane, which extends from the point of the shoulder to the bend of the hips, the lower extremities are bent at an angle more or less acute, according to the nature of the case; and by being thus suspended upon the sloping position of the couch, are made to keep up a steady and constant *extension* by their weight upon the distorted or diseased parts; the effect of this gentle and continued extension materially assisting in straightening the back, and where caries of the bones and ulceration of the cartilages exist, separating the diseased surfaces and counteracting the pressure, which even the contraction of the muscles occasions and renders injurious. The position thus removes a principal cause of the absorption of bone, inflammatory action, increase of deformity, paralysis, and other symptoms. In a quotation from Mr. Liston, it is remarked that the prone position may be most favourable in certain diseases, by taking the pressure off the diseased parts, by preventing the carious bodies of the vertebræ from falling in upon one another, and by assisting the return of the blood from the numerous veins contained in the bodies of the vertebræ and in the spinal canal.

Mr. Coles admits the propriety of the usual mode of practice in lateral curvature, so long as it is *secondary* in its nature, by which he means dependent upon local causes, but the moment marked symptoms of constitutional debility become appa-



rent, which, in nine cases out of ten, is antecedent to or coeval with the first signs of distortion, all the exercises generally employed to produce muscular strength are injurious, and the prone position should be immediately adopted.

The prone position, according to Mr. Coles, is applicable to confirmed cases of lateral curvature, and most essential when inflammation or disease of the bone exists; to both mild and severe cases of posterior projection: to injuries of the spine and paralysis of the lower extremities, whether caused by accident or otherwise; to all cases of psoas abscess, both in the early stages and when matter is pointing, or has made its way anteriorly; to the incipient stage of disease of the vertebral column; and to inflammation and injuries of the spinal marrow, and of its investing membranes; to deformities of the chest, and to disease of the hip-joint. Mr. Coles states that in many of these cases, otherwise incurable, the prone position will enable us to effect a cure, and that when a cure is impossible, it affords certain relief and a great chance of improvement.

For the lateral depression of the chest and prominent sternum, Dupuytren had recommended frequent pressure upon the sternum. (Ext. art. 86, p. 118.) Mr. Coles recommends the prone couch and the pressure which results from the weight of the chest upon the mattress, which can be increased, diminished, or removed, by altering the angle at which the body rests, and by rendering the material of the mattress either hard or soft. Pressure thus produced does not interfere with the elasticity of the chest, and may be sustained for a long time without inconvenience.

To produce extension without the aid of merely mechanical means, which Mr. Coles condemns, a special contrivance is had recourse to, and when the curve is situated high up in the vertebral column, or in the neck, extension may be effected by the use of a head-swing. This modified extension, combined with the relaxation of all the parts having any influence upon the hip-joint, tends to separate the diseased surfaces in hip-joint disease, and renders the prone position, in Mr. Coles' estimation, almost a specific in its treatment. Thus the prone position for the purpose, with other indications, of taking off the superincumbent weight of the head and of the viscera, according to Mr. Coles, should be our first principle of treatment in spinal affections; but where there is local disease present or suspected, he resorts to the measures recommended by other surgeons; sometimes employing counter-irritation, issues, blisters, and especially local applications of iodine, and in the main preferring mild to severe measures. For the constitutional debility he recommends great attention to the digestive organs and the secretions, a generous diet, with the moderate use of porter rather than of wine, iodine and steel, as exercising the most direct medicinal influence, and he attaches much importance on administering the latter in small but repeated doses.

For the purpose of rectifying the deviation when no pain or tenderness is present, he employs stretching by the muscular efforts of the patient, repeated about every second day: manipulation and pressure, which should be directed upon correct anatomical and physiological principles: friction, which is a most important means of stimulating the activity of the venous circulation, and of promoting absorption; and local muscular exercise, which excites the arterial circulation, propels blood to the parts, and, promoting deposition, increases the power and activity of the muscles. These measures may be made to produce the best effects, but if injudiciously employed, are calculated to do the greatest possible mischief.

The following illustrative cases are condensed from Mr. Coles' essay.

A boy, twelve years of age, affected with a posterior projection, the disease affecting several of the lower dorsal and lumbar vertebrae, was greatly improved by maintaining the prone position for five months, and perfectly restored at the end of seven months. A boy, three years and a half old, with a posterior projection, including only three bones, the middle one evidently diseased, was completely cured by remaining on the prone couch eight months. A boy, seven years and a half old, of an intensely scrofulous habit, with very considerable angular projection, including eight dorsal vertebrae, and terminating in a sharp point, over which the skin was stretched, pale, and shining, having been placed under treatment for twelve months, during which there was every symptom of caries of the vertebrae, the prone position being steadily maintained, on his discharge was able to walk upright, was in good general health, the projection of the spine much

reduced, and the carious state cured; the only remaining deformity being the result of ankylosis of the diseased bones. A boy, twelve years of age, with a considerable posterior projection, of an angular kind, in the neck and upper dorsal vertebræ, the ribs on each side flattened, the lower end of the sternum projected outwards, suffering also from dyspnœa and violent palpitation and cough, the body greatly emaciated, the lower limbs completely paralysed, and all control over the evacuations lost, experienced immediate relief from being placed on a prone couch; and having been kept in that position for eighteen or twenty months, with the aid of constitutional and local treatment for various symptoms which presented themselves, sensation and the power of motion gradually returned in the limbs, with the natural command over the bowels and bladder; pain and heat in the spinal column subsided, and the projection diminished; the deformity of the chest also subsided, and with it the pectoral and cardiac symptoms; the boy was ultimately entirely cured, with very little deformity remaining to indicate the original seat of the disease. A young lady, with a very considerable lateral curvature, and a counter curve in the loins, placed on the "prone couch," both by night and by day, uniformly and rapidly improved, and was ultimately quite cured. A policeman, from an injury received on duty, had paralysis of the side, and the spine in the lumbar region projected, and presented an angular appearance, with great pain on pressure and motion, and paralysis of the bladder; this case was completely cured. Other cases of a most unpromising character are recited, in which success was complete; and Mr. Coles most strongly insists that the prone position is also applicable with the greatest possible advantages to the treatment of hip-joint disease.

#### § VI.—*Injuries and Diseases of the Abdomen.*

17. The "British and Foreign Medical Review" contains an article on the nature and treatment of wounds of the intestines, purporting to be an analytical and critical review of several works on this department of surgery, by Dr. Samuel Gross, of Louisville, Dr. Gely, of Nantes, and Professor Dieffenbach; we shall furnish our readers with an abstract of some of the principles which the article embraces.\*

The older and many of the modern surgeons hold that an instrument may traverse the abdomen without injuring its contents. Dr. Gross agrees in this opinion, while Mr. Travers has strongly maintained the opposite doctrine. In addition to the cases recorded by La Motte, the reviewer refers to a case in Mr. South's notes to Chelius,† in which an iron spike traversed the abdomen, tore the right common iliac vein, and deeply indented the third lumbar vertebra, without injuring any of the viscera. Also, from "L'Expérience,"‡ a remarkable case of a woman, five months pregnant, who fell from a tree on a wooden stake, which entered the inner and back part of the left thigh, and could be felt through the soft parts at the external border of the left quadratus lumborum muscle, passing up behind the false ribs. As the stake had broken off deep in the wound, and therefore could not be withdrawn from below, M. Scaruffi cut down on it, in the lumbar region, opened the peritoneum sufficiently to admit the hand, and extracted a piece of wood 8½ inches long, his hand being in contact with the intestines, which certainly appear not to have been wounded, and the woman recovered. Also a case, recorded by Mr. Hennen, in which a ramrod penetrated the abdomen from before backwards, and became firmly impacted in the spine. The patient, in this case, or in one exactly similar to it, mentioned by Dr. Gilkrist,§ was drowned shortly after his recovery, and no injury of any of the viscera could be detected. Dr. Gross and the reviewer consider that these cases establish that an instrument can penetrate between the intestinal convolutions without wounding them.

The absence of symptoms after deeply penetrating wounds of the abdomen is sometimes evidence that the viscera have escaped contact. This is illustrated as follows. A case, by Mr. Ellis, of attempted suicide, in which a sword entered

\* Jan. 1, 1847, p. 1.

† Part v., par. 510.

‡ No. 373, Aug., 1844.

§ Lancet, 1832, p. 147.

near the navel, and protruded through the integuments very near the spinal column: in a few days the patient recovered, having manifested scarcely a symptom of injury.\* A case by M. Roy, in which an iron spit entered two inches to the right of the navel, and was firmly impacted in the bones of the pelvis near the sacro-iliac symphysis, recovery being uninterrupted by any bad symptom.† A case of a child, aged 14, who fell on an iron rod, which passed in at the fold of the left buttock, about  $2\frac{1}{2}$  fingers' breadths from the anus, and came out a little below and to the right side of the umbilicus. He was discharged from the hospital, on the twentieth day, without any symptom indicating injury of the abdomen having ensued.‡

The article discusses the subject of *fecal effusion*; that this is an unusual result of penetrating wounds of the abdomen with injury to the intestine, is held as a dogma by Mr. Travers, and by almost all surgeons since he wrote. Dr. Gross endeavours to establish, on the contrary, that fecal effusion almost always, if not invariably, follows wounds of the bowel to the extent of six lines; but that it does not, in the majority of cases, result from wounds not exceeding four lines in length. From the numerous cases in which wounds of the intestines have been inflicted without fecal effusion, and for other reasons, the reviewer believes that Mr. Travers' opinion comes much nearer to the truth than does that of Dr. Gross. Two cases are given by the reviewer to prove that when feces are effused, they may form a circumscribed depot; and it appears to be possible where they are circumscribed, even at a distance from the external wound, that, as has happened with effusion of blood, they might be discharged by suppuration making its way externally.

In penetrating wounds of the abdomen, unattended with protrusion of the intestines, where there is reason to suppose that feces are effused, Dr. Gross recommends cutting down on the wounded bowel, removing the effused matter, and securing the wound of the bowel by suture. The question of the propriety of this practice turns upon the difficulty of the diagnosis. Excruciating pain, gastric oppression, and collapse, are utterly insufficient as diagnostic marks of fecal effusion into the peritoneal cavity. Baudens and Larry maintain, from very ample experience, that in penetrating gunshot wounds the intestine is wounded in a great majority of cases, and although no very alarming symptoms occur at first, fecal effusion almost constantly exists, which will terminate fatally unless the surgeon dilates the external wound, removes the effused matter, and sews the intestine; but, here, according to M. Baudens, the wound of the intestine may be ascertained by the parietes losing their softness and pliancy, contracting spasmodically, and acquiring an almost cartilaginous hardness; the wounded bowel almost always lies immediately behind the external wound; and if feces escape externally or soil the exploratory finger, no doubt can exist: and furthermore, if its gentle pressure on the abdomen expels bubbles of air through the wound of parietes, we may conclude that the bowel is wounded; if any of these symptoms are present, Baudens holds that we should cut down on and sew the intestine. But whatever may be the case after gunshot wounds of the abdomen, one of the diagnostic marks here mentioned is absent after incised and punctured wounds. The tympanitis, however, especially if air could be expelled through the wound, is of some value, and the reviewer admits that if the external issue of feces were conjoined with or had preceded it, a surgeon would be justified in adopting the practice recommended by Dr. Gross.

*In penetrating wounds of the abdomen, with protrusion of the intestine*, it is all important to know that the intestine, when reduced, has actually slipped into its natural situation. The bowel has been known not only to be passed into the sheath of the rectus, but also between the peritoneum and the abdominal muscles, or between the abdominal muscles, accidents against which every precaution should be taken by the surgeon.

*Penetrating wounds with protrusion and injury of the intestines.*—Numerous cases are on record, in which Scarpa's practice of returning a wounded intestine without suture has been adopted, and some extraordinary instances of recovery, after the most extensive injuries, are included among them; but the return of an intestine with any wound in it of sufficient extent to admit of the extravasation of

\* Lancet, 1834-5, vol. ii., p. 756.

† Gaz. Méd. de Paris, 1843, p. 708.

‡ Ibid.



faces, without first applying a suture, is now rejected by all judicious surgeons, as a proceeding fraught with the greatest danger. In the extract we have given from Mr. Guthrie's recent work, it is laid down as a rule, that an intestine when incised to the extent of a third part of an inch, should be sown up by the continuous suture, (vide page 116). Malgaigne lays down the same rule.\*

*The process of reparation of a wounded intestine by suture.*—By Professor Miller, and other recent writers,† it is laid down as a rule, in applying the suture, to turn in the wounded part gently, so that the approximated surfaces shall be peritoneal, that structure being much more capable of the required plastic exudation than the mucous or middle coats; still by this article we learn that Dr. Gross, M. Reybard, and M. Petrequin, have completely established by their experiments, that the early cohesion between the lips of the wound very commonly, though not uniformly, persists when the suture is loosened, that the *adhesion of the mucous membrane*, though achieved more slowly than that of the other tunics, is ultimately complete, and may occur in one of two ways; usually, the lymph effused between its divided edges is gradually absorbed, until the edges themselves come into contact, and after a period, varying from a few weeks to as many months, coalesce directly; sometimes, however, the breach of mucous surface is healed by granulation; and, in fine, from the results obtained by all these authorities, it appears to be unquestionable that the mucous coat is regenerated, and may cicatrize completely like the other tunics.

*On the use of the glover's suture in wounds of the intestines.*—Dr. Gross, MM. Reybard and Petrequin, all dwell on the importance of taking the stitches very close to each other, and drawing them firmly in order to ensure union. The two latter also recommend, as essential to ensure the passage of the suture into the bowel, to take the first stitch from within outwards, and to make a very large knot on, or even attach a small dossil of lint to the extremity of the thread. Many experiments are cited in favour of the use of this suture; but the reviewer sums up by stating, that the glover's suture cannot be relied on in the treatment of wounds of the intestines.

Mr. Guthrie's instructions for the continuous suture in wounds of the intestines, are as follows: "That the needle be carried through the cellular fibrous lamella, or between the muscular and mucous membranes, and not across all the tunics, as is generally advised by authors. The lips of the wound should be held parallel with each other during the operation, and the stitches, drawn with considerable firmness, should not be more than a line, or at farthest, the eighth of an inch apart. The needle is to be introduced a short distance, say half a line, from the peritoneal edge of the opening, and brought out at the corresponding point at the opposite side. The first stitch should be one line from one angle of the wound, and the last about the same distance from the other, care being taken to secure each with a double knot, and to cut off the extremities of the suture close to the surface of the tube. The instrument which Mr. Guthrie prefers, and which he employed in nearly all his experiments, is a long slender sewing-needle, armed with a waxed but strong and delicate silk thread. The operation should be performed as expeditiously as is consistent with safety, and the bowel handled in the gentlest possible manner."‡

*On the interrupted suture.*—The reviewer remarks on the rapidity, as compared with the glover's suture, with which single stitches are detached. Dr. Gross affirms that the cases on record, taken in connection with the experiments which he details, exhibit an array of success highly favourable to this kind of suture.

*M. Robert's method of invagination.*—This method is treated of pretty fully, but in the main it is rejected, on account of its difficulty, and of the violence done to the parts in executing it, as also the uncertainty of its results. There is, however, one remark worth repeating. M. Bérard was induced, in one case, which proved fatal, to adopt the method of invagination, owing to the intestine being furnished with valvulae conniventes nearly to the cæcum: a circumstance which led to the supposition that the small intestine was divided high up, which induced a fear that an artificial anus would be followed by death from defective nutrition.

\* Operative Surgery, p. 403.

† Practice of Surgery, p. 355.

‡ On Wounded Injuries of the Abdomen, 1847, p. 26.

The reviewer, with Dr. Gross, rejects the plan of invagination, were it for no other reason than the impossibility of distinguishing the lower extremities of the intestine with certainty.

M. Gely's suture was described in our First Volume (p. 135). M. Gely maintains that it is applicable in wounds of the intestines with loss of substance involving a portion only of the circumference of the intestine. When applied the intestine must be flexed on itself, and the more so the greater the loss of substance. The resulting curvature of the bowel, as appears from the results of experiments on animals, does not cause any obstruction or other inconvenience, even when the intilated portions of the bowel are placed parallel to each other. Again, if two orifices, with loss of substance, should exist in the intestine, M. Gely proposes that they should be brought into contact by means of his suture, which is as easily applied to two orifices as on the two margins of one aperture. M. Gely thinks, that his suture may be applicable in cases of gangrened intestine, when a portion only of the cylinder is involved; but, if an entire zone of the tube is destroyed, he prefers the establishment of an artificial anus, and at the same time proposes, as an expedient which appears to be feasible, to unite, by his suture, the extremities of the intestine, not completely, but to the extent of a third or one half of their circumference only, obstruction to the course of the feces being thus avoided, and the bowel favourably placed for healing the artificial anus.

The latter part of the article, which describes Dieffenbach's methods of treatment in artificial anus, will be interesting, as the reviewer seems to think, to those who are in search of the curiosities of surgical practice.

#### § VII.—*Injuries and Diseases of the Urino-genital System.*

18. There are many interesting cases and important remarks in the journals under the general head of *urinary calculi*. In several cases of operation alarming arterial hemorrhage occurred, and we observe that in all the practice adopted was immediately to tie the artery. There are several cases remarkable in one point of view or another. Mr. E. K. Parker has recorded one of a calculus formed around a hair-pin, extracted, by Mr. Lawrence at the Sussex County Hospital, by lithotomy, from the bladder of a female child, aged five years. The calculus weighed four drachms and thirty-two grains, and was composed essentially of uric acid.\* The patient recovered; but there is no satisfactory account of the manner in which the pin reached the bladder. In the "*Gazette Médicale*,"† there is also an extraordinary case by M. Fleury, who found, after having removed some fragments, of stone in an operation of lithotomy, a shoemaker's awl in the bladder, incrustated with saline matter, and implanted on the walls, on a level with the neck. A communication existed between the bladder and rectum. It was generally believed that the patient introduced the instrument by the urethra, but he affirms that he swallowed it eighteen years previously! A case in which 216 calculi were found in the bladder after death is recorded by Dr. John Kelly,‡ of the state of New York. The man was 73 years old, and had been troubled, more or less, with gravel for 23 years. The bladder was found much elongated and enlarged, reaching nearly to the umbilicus, and greatly thickened. The ureters were nearly nine times larger than natural; the left kidney completely broken down by disease; the calculi were of different sizes and shapes, the largest were more than an inch in diameter, half an inch thick in the centre, and weighed 111 grains; the whole of the calculi weighed about three ounces, and they nearly filled the bladder; and there were adhesions which appeared to prevent the contraction of the bladder. Twelve calculi were passed before death, making in all, 228.

Passing from isolated cases, there is a contribution on urinary calculi, by Dr. Brett,§ in the "*Medical Times*." Dr. Brett remarks on the frequency of the disease in India, and gives the results of 108 operations performed by himself. The composition and the varieties of these calculi resemble the calculi extracted in this country; the lithic acid and the lithate of ammonia generally prevailing. Mr. Burdard, an Indian practitioner, referred to the use of coarse unleavened bread at all

\* *Lancet*, July 11, 1846.

† *Month. Journ. of Med. Science*, June, 1846.

‡ *Amer. Quart. Journal*, Jan. 1847, p. 246.

§ *March 20, 1847.*

hours of the day, as one fruitful source of these urinary deposits, and Dr. Brett's opinion appears to coincide with Mr. Burnard's on this point. His practice in calculous affections corresponds very closely with that of Dr. Prout. In another communication we observe that of 100 to 150 children operated upon in Paris, by M. Roux, all, with the exception of three, belonged to the poorer classes of society.\* Again, Dr. Parker, of Canton,† gives an account of several successful operations of lithotomy performed upon the Chinese. In one case the calculus was of a peculiar character. It was of a spheroidal form, chocolate colour, minutely spotted with yellow; its surface was smooth and shining, not unlike the skins of some water snakes. It measured four inches and a half by five inches and a half in circumference, and weighed two and a half ounces.

19. *Lithotomy*.—The "Dublin Quarterly Journal"‡ contains an interesting article on the operation for stone, by Sir P. Crampton. In our Third Volume (p. 191) our readers possess this eminent surgeon's comparative view of *Lithotomy* and *Lithotripsy*; the same volume also contains Dr. Bresciani's operation of *Urethrotomy*, for the extraction of stone in the bladder (p. 106); and a remark or two on *Lithectacy*. We are happy to have so good an occasion to revert to these important subjects. Sir P. Crampton's objects in the present paper are, to inquire into the best manner of performing "the lateral operation," and to describe a mode of operating on women which is not liable to be followed by incontinence of urine. The paper sets out with an interesting historical account of the lateral operation, as performed by Frère Jacques, and improved by Rau and Cheselden, and then proceeds to consider the only difference among operators, which relates to the means of performing the second or internal incision, by which it is proposed to make an opening "through that part of the urethra which lies *beyond* the corpora cavernosa, and *in* the prostate gland."

The principal means which have been devised to effect this object are—

1. The same knife, of whatever form, by which the external incision has been made.

2d. The straight, grooved director and lithotome of Le Dran, Daunt's knife and director, with improvements by Messrs. Deise and Peile.

3d. A beaked knife, that is, a knife, whether bistoury or scalpel, the point of which is blunt, and prolonged into a beak, which, being held by the urethra in the grove of the staff, guides the cutting part safely into the bladder.

4th. The bistourie caché of Frère Cosmo.

5th. Cutting gorgets of various constructions.

6th. The double bistourie caché of Dupuytren, for the bilateral section of the prostate.

7th. The operation of dilatation, by Bresciani de Borsa.

After describing—1st, the difficulties which attend the employment of the scalpel; 2d, Le Dran's operation, and the successive improvements on it by Mr. Daunt, Mr. Dease, and Mr. Peile—Sir Philip gives Mr. Dease's account of the method of operating with Mr. Daunt's instrument. "The patient being properly secured on the table, and the staff introduced and held by an assistant, the operator makes his external incision, as described by Sharp and Bromfield, or as if he was to use the cutting gorget. Having opened the membranous part of the urethra, the operator introduces the conductor along the groove of the staff into the bladder: he then withdraws the staff, and takes the conductor in his left hand. Having introduced his two forefingers into the handle, he places his thumb over the bow of the instrument, which gives him an entire firmness as to the risk of the operation. He then lateralizes the conductor by the pronation of his wrist, and takes the lithotome and engages it on the crest of the conductor, and finishes the operation by running the lithotome along the crest; having arrived at the extremity of the conductor, he withdraws the knife along the crest, and then introduces the forceps on the conductor, which withdrawn, he proceeds to the extraction of the stone."

Mr. Peile, in an excellent paper, published in 1807, in the first and only perfect volume of the "Dublin Medical and Physical Essays," describes the improvement

\* Gazette Méd., Jan. 3, 1845.

† Monthly Journ. of Med. Science, June, 1846.

‡ Feb. 1847, p. I.



which he has made in these instruments, and adds some highly important directions respecting the mode of using them. He lays great stress on the necessity of the close application of the conductor to the arch of the pubis while passing the lithotome—a circumstance not noticed by Mr. Dease, yet one on which the safety of the operation mainly depends. A neglect of this precaution in passing the conductor, must almost necessarily lead to the wounding of the rectum.

Sir Philip Crompton has often seen Mr. Peile operate by this method, and has also employed it himself: and so impressed is he with its value, that he strongly recommends its adoption, *in the case of adults*, by all persons who are inexperienced in the operation of lithotomy—and all operators must at first be inexperienced—and if he now had occasion to operate on an adult with a deep perineum and a large stone, it is probably the mode of operating he would adopt in preference to any other.

3d. Sir Philip states that the beaked bistoury of Mr. T. Blizard, and the beaked scalpel of Sir Benjamin Brodie, are no doubt safe and excellent instruments in the hands of such operators as their inventors, and in any hands they are safer than a mere knife, and infinitely preferable to any form of gorget. Held in the groove of the staff by the beak, the cutting part is safely guided to the bladder, and the operator has more control over the direction and extent of his internal incision than with the gorget.

4th. 5th. 6th. The objection to the *bistourie caché* of Frère Cosme, the cutting gorget of Sir C. Hawkins, and the double bistourie caché of Dupuytren are then referred to.

7th. After describing the operation by dilatation, by Dr. Bresciani (Abstract, Vol. III. p. 106), Sir Philip remarks that it is truly a lateral operation, so far as the external incision is concerned, but he appears to doubt whether the prostate is not in every case divided. The operation, Sir Philip states, is so completely opposed to the notions of British surgeons, and seems at the outset liable to such grave objections, besides the physical impossibility of applying it in a great number of cases of a certain description, that he would not have thought it necessary to include it among the modifications of the lateral operation, were it not that Signor Bresciani, surgeon-in-chief to the great hospital at Verona, is a professor of surgery of high character in Italy; and that he has given an account of one hundred cases in which he and Signor Manzoni have performed the operation with success.

"The objections to this operation are too obvious to be here insisted on. It is, perhaps, enough to say that *in these countries* an indurated prostate is made of tougher materials than to yield to the pressure of the strongest finger, without being partially divided by the knife, or partially torn by a blunt instrument: and we here also meet, at times, with perineums so deep that the longest finger cannot reach the cavity of the bladder. It is plain, therefore, that in such a case the operator cannot pass his forceps into the bladder without lacerating the prostate, unless he does something more than divide the apex of that gland. Great interest, however, attaches to Signor Bresciani's operation, as it shows that in a large number of cases a very slight incision of the prostate gland will be sufficient to enable the operator to effect such a dilatation of the neck of the bladder as will enable him to complete his operation.

*Sir Philip Crompton's proposal.*—Sir Philip trusts he shall be able to show that the operation may be performed in such a manner as, in a great measure, to avoid the dangers inseparable from the knife, when used in the ordinary way. There is no novelty in the plan of the operation, and the instruments are, with scarcely any alteration, those in common use.

He proposes a mode of using the straight, blunt-pointed bistoury, which renders that instrument perfectly safe, by which the operator divides the prostate gland and neck of the bladder by an incision which shall be of a uniform size: never so deep as to cut the base of the gland, and yet always sufficiently so to admit of dilatation to any required extent. The principle, then, of the operation is twofold. First, to avoid, in effecting the second or deep incision, the danger arising from the escape of the instrument, whatever be its nature, knife or gorget, from the groove of the staff. Secondly, to effect, without the risk of hemorrhage, an incision of the prostate, which shall, *in every case*, be just sufficient, and no more, to allow the fore-finger of the operator to pass through it into the orifice of the bladder:

This done, it is well known to every practical lithotomist that the rest of the operation, so far as the opening into the bladder is concerned, is most safely effected by dilatation, those cases, of course, excepted where the great size of the stone requires for its safe extraction the division of the prostate on both sides. But the proposed method of using the bistoury is equally applicable to such cases.

The peculiarity of this operation consists in the mode of using the bistoury, which is made to cut on the principle of the *wedge*, instead of that of the *saw*, the cutting edge being pressed down upon (not drawn over) the fibres of the part intended to be cut. In cutting the soft parts of the living body, the resistance to the knife is not uniform; muscular, aponeurotic, and cellular texture giving different degrees and kinds of resistance. In lithotomy, it is confessedly an object of the greatest importance to effect a sufficient opening into the bladder with the least possible cutting, but also with the least possible laceration of its neck. This object may be obtained by the following mode of proceeding. When the external incision has been made in the usual direction, and to the usual extent, the point of the scalpel, guided by the fore-finger, is to be gently pushed into the groove of the staff, the groove being laid bare to the full extent of the membranous part of the urethra; the blunt point of a straight, narrow bistoury, which like Sir A. Cooper's hernia-knife, is squared to the extent of half an inch, is to be introduced into the groove of the staff, *in which it is completely concealed*, and from which it cannot escape without tearing quite through the prostate. Pioneered, then, by this blunt portion of the blade, the cutting part, still concealed in the groove of the staff, is lodged safely in the prostatic urethra, while the blunt portion enters the bladder. The point being then firmly pressed against the portion of the staff that is lodged in the bladder, the operator gives a slight degree of lateralization to the blade, and slowly depresses the wrist of the right hand, so as to bring the heel of the knife down to the lower angle of the external incision. The whole wound thus forms a triangle, the base of which is at the integuments, and the apex in the bladder. One side is formed by the staff above, the other by the bistoury below. The staff is then withdrawn, and the knife being held steadily in its lateral position, with its heel still depressed, the operator slowly slides the fore-finger of his left hand along its back, *as far as it will go*. In adults, in whom the perineum is not usually deep, the top of the finger will pass into the bladder, and in general come in contact with the stone; but even in the deepest perineum, the top of the finger will reach to the orifice of the bladder. The operator has thus completed the main intention of the operation, as it is understood in these countries; that is to say, he has made an opening of sufficient size to pass his fore-finger quite into the bladder, in a vast majority of cases, but quite into its neck in all cases, and that has been done with no more division of the parts by the knife than was necessary to effect the dilatation of the neck, *without its laceration*. It is plain that when dilatation is combined, in this way, with cutting there can be no laceration, for all the fibres that oppose a resistance to the stretching (and that would, from their structure, be torn rather than yield, if the stretching were increased) are cut by the perpendicular pressure of the edge, and what is most to be desired, no other fibres are cut, for the elastic or dilatable parts when deprived of the support of the inelastic fibres, yield before the wedge-like pressure of the finger. The opening into the bladder is then, *in all cases*, and without reference to the state of the prostate, exactly sufficient to receive the fore-finger of the operator; *plus* the blade of the bistoury, the back of which being partly buried in the pulp of the fore-finger, does not exceed the one-sixteenth of an inch in breadth. The opening being thus made, the bistoury is slowly withdrawn along the trajet by which it entered the bladder. The operator, if he has reason to think he has a large stone to deal with, presses the edge of the knife gently downwards and outwards, so as to enlarge the incision along its whole course. A blunt and somewhat conical gorget is then passed on the finger into the bladder, with its extremity slightly inclined towards the lower fundus, while the whole instrument is depressed towards the rectum, a manœuvre which greatly facilitates the seizing and extracting the stone. This mode of operating has the double recommendation of being at once safe and of easy execution; on this account it may not be unworthy of the attention of those who have yet to acquire that dexterity in operating with the scalpel which great experience alone can supply.

M. Louis, more than sixty years ago, proposed that when the incision of the prostatic neck of the bladder was not sufficiently made by the gorget, a straight, narrow, and blunt-pointed bistoury should be introduced on the index-finger of the left hand into the wound. "*Afin d'opérer sur ces parties un débridement, secondaire, que la touche dirigerait jusqu'au degré jugé indispensable.*" (Diet. de Médecine, art. *Cystotomie*.) This proceeding, adopted by Sancerotte, and highly approved by Dupuytren and Begin, contains the germ of the operation which has been recommended; but it differs from it in this material particular, that in the operation in question the blunt-pointed bistoury is the *principal*, and not the *accessory*, and that the finger is introduced upon the knife, and not the knife upon the finger, and on this depends the *whole value* of the operation; for if the knife be introduced upon the finger to dilate the wound (insufficiently made by the gorget, as recommended by M. Louis), the finger must have already reached the neck of the bladder, which consequently needs but little "*débridement*;" but if the finger be introduced upon the knife, the knife cutting a passage before it enables it to arrive at a point which it could not otherwise reach without causing laceration.

20. *Lithotomy in Women*.—Perineal lithotomy, in whatever manner performed, if the stone be large, is said to entail the miserable consequences of incontinence of urine. Such, at least, is the opinion of two of the most distinguished and experienced surgeons of the present age. Sir Philip confidently states that an operation on the principle of that recommended in this paper for the removal of calculus from the male can be applied to the female, even when the stone exceeds an ounce and a half in weight, with perfect safety, and without entailing the deplorable consequence of incontinence of urine, even in the smallest degree. He lays no claim to originality in suggesting this operation; the principle has long been established, and has been acted upon by Sir B. Brodie and Mr. Liston. The *principle* is the combining dilatation with incision. The mode of carrying out the principle differs, in some respects, from that recommended by those distinguished surgeons, and unquestionably has proved completely successful in the cases in which it has been employed by Mr. Cusack and himself.

The instrument employed by Sir Philip Crampton affords a convenient means of applying to the female urethra the combined action of cutting and dilating in such a way, that just so much of the urethra, *and no more*, shall be cut as will put it in a condition to be dilated to the required extent, without subjecting it to laceration. The instrument is to be used in the following manner. The apex of the cone is to be introduced into the urethra, and pushed gently forward until it meets with some obstruction from the tightness of the urethra; the cutting blade is then to be raised to the extent of one-eighth of an inch, by pressing the thumb on a stop at the heel of the instrument, and the dilator is to be slowly pushed forward. Those fibres only which, undivided, would resist the dilatation, give way before the edge of the knife; the dilatation then advances unchecked until it opens a sufficient passage for the finger into the bladder: the finger is then withdrawn, and replaced by the forceps, when the stone or extraneous substance is extracted in the usual manner. By this mode of proceeding, Sir Philip Crampton lately succeeded in extracting a stone nearly an inch and a half in diameter, formed on a double wire hair pin, three inches and a half in length. The calculous matter was removed in fragments, as they separated from the pin: the pin itself, one limb of which was bent, and firmly imbedded in the neck of the bladder, was not discovered at the first operation, but was removed by a second, which was performed two or three weeks afterwards; on both occasions he was assisted by Mr. Cusack. Six weeks after the last operation he had an opportunity of ascertaining, *to a certainty*, that the young lady was able to retain her urine for eight hours together. Mr. Cusack operated with the same instrument on a young woman in Steeven's Hospital, for the removal of a metallic needle-case, three inches and a half long. It was necessary, before introducing the forceps, to pass the finger, and use considerable efforts to dislodge the extraneous substance, which had become impacted in the lower fundus of the bladder; nevertheless, the woman left the hospital eight or ten days after the operation, having perfectly recovered the retentive power of the bladder.

The effect of the cutting dilator, used as above described, is to cut only the external orifice of the urethra, and about one inch and a half of the internal mem-



brane lying next to it, while the orifice of the bladder remains uncut; in this respect its action is different from that of the *bistourie cachée*, which, from its construction, must, in the first place, cut the neck of the bladder, however slightly, and afterwards incise the internal membrane of the urethra through its whole length. In Mr. Liston's method the neck of the bladder is slightly notched on both sides, while the orifice of the urethra is only dilated by the screw dilators. Time and experience must determine which of these three methods is the least likely to be succeeded by incontinence of urine.

Our readers will do well to compare the present Report with the articles in our third volume, to which we have referred. It will be observed that Dr. Bresciani de Borsa acts upon the principle of a simple urethrotomy, but that Sir Philip Crampton appears to doubt whether, even in the Verona professor's operation, the prostate is not divided to a limited extent. Sir Philip Crampton, on the other hand, makes his proposal for the purpose of completing the operation with as small a division of the prostate as practicable, to secure the ultimate object of sufficient dilatation, so that both surgeons, it may be said, are on the same tack. Whether a hint which we think we collect from Sir Philip Crampton, viz., that the difference of climate is attended with a difference in the degree of dilatability of the prostate, or whether Dr. Bresciani's operation really extends to a slight incision of the prostate, is the true account of the difference in the statements of these distinguished surgeons, remains to be proved; but, considering the extent of the latter professor's practice, and the evidence from post-mortem examination to which he refers, we can scarcely conceive him mistaken on such a point.

In a critical examination of the principal operations for stone, by a Spanish surgeon, M. Sant. Guerra y Garcia, the author describes what he deems the most simple process. It consists in carrying the point of a bistoury into the groove of the staff, pushing it thence into the bladder, and drawing it back to divide at once the neck of the bladder, the prostate, and the external soft parts, to a sufficient extent to admit of the extraction of the stone. This method is said to have been suggested by Dupuytren.\*

21. *New Form of Director and Gorget*.—Dr. Mettauer, in the "Philadelphia Medical Examiner," describes a peculiar director and gorget, which he employs, and which he claims as his own invention.† The director has a dovetail groove, and the gorget a globular beak. He says, being early aware of the danger likely to arise from the accidental escape of the beak of the gorget—or knife, if that instrument be employed—from the groove of the director during its passage into the bladder, especially with inexperienced operators, the dove-tail of the director and globular beak of the gorget suggested themselves to him as improvements which would prevent such an accident; and abundant experience with the instruments thus modified, conclusively established their value and utility in guarding against it in the most effectual manner. Simply inspecting the instrument, the inventor states, if they are properly constructed, would satisfy the most casual observer that it would be impossible for the gorget to pursue any other direction than that of the groove of the director. The beak should be well formed, with a globular finish, supported by a peduncle of sufficient strength to guard against its being broken by any moderate degree of violence from a twist, or irregular movement along the groove of the director. The director should be fully six inches long in the shank, with a handle some three or four, and of a size to fill the hand, so that it can be firmly grasped and securely held; and the two branches must form a very obtuse angle with the groove on the side of the vertex or point of the angle. The director and gorget he employs are delicately formed, and, in his opinion, should always be so constructed. A probe-point should always form the termination of the director, so as to close that extremity of the groove. His mode of operating is simply to form the perineo-urethral incision, directed by a staff carried into the bladder; and then to introduce the straight director just described, through the incision, fairly into the bladder, along the groove of which the gorget glides to form the second, or the urethro-prostatic section. As soon as the straight director enters the urethra beyond the proximal angle of the first incision, the staff should be carefully removed from the urethra.

\* Gazette Med., 2d Jan., 1847.

† Med. Times, April 8, 1846, p. 31.

Many of the American surgeons appear to prefer the bilateral operation, in particular, Dr. Mussey, of Cincinnati, Ohio, has operated in five cases successfully by this method, which he regards as, upon the whole, much more safe than any other. As compared with the lateral, he advances the usual arguments, and states that it gives greater security against injuries to the rectum and the pudic arteries, and does not expose the vesiculæ seminales, and the plexus of veins at the neck of the bladder, as does the lateral, when the deep-seated section of the parts is made to correspond in direction with the superficial incision.

22. *Lithotrixy*.—M. Leroy d'Etiolles has read a memoir on a new system of lithotrixy, in which the stone is reduced to powder in a few minutes by means of instruments, which, by a lateral oscillatory motion, present successively, on all points of its diameter, either rasps or blades, which rapidly grind it.\* This plan of pulverization is most especially suitable for solitary calculi of great magnitude. Where calculi are numerous and of small size, M. Leroy d'Etiolles continues to employ the system of crushing combined with artificial extraction, which renders the cure much more rapid, and which he has employed successfully in more than 100 cases. A *brise-pierre*, with large and deep scoops, allows nearly two cubic millimeters of the debris of the stone to be extracted every time the instrument is removed, so that under favourable circumstances a calculus of 15 lines diameter may be broken down and removed at one sitting.

In a subsequent communication M. Leroy d'Etiolles states† that he presented several instruments to the Academy, which, by variety in the mechanism, but all based on the same principle, were capable of pulverizing urinary calculi. The instruments are curved, formed of two principal pieces capable of a lateral or oscillatory motion on each other, by which the stone having been seized by one of them is gradually and successively presented to a grinding apparatus on the other. The principle is applied in two ways. In one the stone is worked from behind forwards; in the other, sideways. To comprehend the latter we must suppose two ordinary curved *brise-pierres*, of the same length, but differing in thickness, placed beside each other, and capable of a sliding motion from before backwards, and also a rotatory motion, by which their curved parts describe a circle; the larger of these carries the grinding apparatus, the other seizes the calculus, holds it, and, by a rotatory motion on itself, pushes it laterally against the toothed helix, or plates, or files destined to destroy it.

During the introduction the two *brise-pierres* are close together, apparently forming but one; for the purpose of seizing the stone they are opened simultaneously. The calculus being caught, it is necessary to present one of its sides to the pulverizer; for which purpose it is held with the weaker of the two, while the branches of the other, a little more opened, describe a circle, which separates the curved parts of the two instruments. During this rotatory motion the surgeon makes a slight sliding motion with the male branch, to ascertain whether the calculus continues interposed between it and the female branch, and when he finds it has reached the side of the stone he brings the grinding tube into play at that point. The other *brise-pierre*, which always contains the calculus held by its other extremity, in its turn executes a rotatory motion on itself, and pushes the calculus against the rasps, so as to effect its destruction. At the same that the sliding motion of one *brise-pierre* on the other successively presents the whole substance of the calculus to the pulverizing agent. It may be understood that this mechanism can also be applied to the crushing operation, which is then effected in a regular progressive manner, without repeated explorations, producing much fewer fragments. For this purpose the mechanism is still more simple, since the sliding movements of one *brise-pierre* on the other become unnecessary. The other principal disposition of the pulverizers, that which presents the calculus from behind forwards to the destructive agent, by making it oscillate from right to left, is more particularly applicable to round stones. This instrument, when closed, has also the appearance of an ordinary *brise-pierre*. It seizes the calculus in the same manner, while this is held between the two principal pieces, one of them divides into three or five branches, which envelope and fix it. The rasps are then brought into play, and attack the calculus from before backwards. This direct action is at

\* Gazette Méd., 2 Mai, 1846.

† 16 Mai, 1846.



the same time made lateral by the oscillatory movement of the two principal pieces of the instrument on each other, so that the teeth are brought successively over the whole transverse diameter of the calculus, which is gradually but rapidly ground down.

We have given this description of the instrument from the French writer, although without a plate we fear it can only convey a general idea of its construction.

The general subject of *Lithotomy* and *Lithotripsy* has been much discussed in various societies. In the Surgical Society of Paris, on a report of an operation performed by M. Lenoir, in a case wherein the bladder was very irritable, and the stone very large, several remarks were made by some of the leading surgeons of Paris, which are possessed of considerable interest. M. Lenoir rejected lithotripsy on account of the irritability of the bladder, which he was unable to subdue by treatment, although the patient was only twenty-eight years old. Before proceeding to cystotomy he introduced a small lithometer, with a view to determine approximately the size of the stone, and found that one of its diameters exceeded an inch and a half; the calculus was probably friable, and the bladder contracted upon it. He rejected the high operation on account of its difficulty in such cases, the risks of infiltration, &c. He accordingly selected the lateral operation. He operated according to the method which he signalized as Ledran's for the extraction of large calculi, viz. by making a horizontal incision on the right side, from within outwards, quite through the prostate gland; this form of incision being the most favourable for dilatation of the neck of the bladder, and the extraction of large calculi. The horizontal incision was made with a probe-pointed bistoury, guided by the index-finger of the left hand.

M. Vidal condemned the measures taken before the operation as useless and deceptive, and calculated only to increase the irritability of the bladder; and he affirmed that it was M. Lenn, and not Ledran, who first particularly insisted upon the horizontal incision of the prostate. M. Malgaigne stated his belief in the utility of determining the size of the calculus before proceeding to operation. M. Guersent expressed his surprise that M. Lenoir did not employ the bilateral operation. M. Lenoir preferred Ledran's method to Dupuytren's, in this case, because, according to Lenn's experiment on the dead body, the former admits of a greater dilatation of the neck of the bladder than the latter, and the extraction of a larger stone. The problem is, to proportion the extent of the incision of the neck of the bladder to the volume of the stone: and when we know beforehand that the stone is very large, the incision should be as large as possible, without extending beyond the limit of the prostate. M. Malgaigne objected, that the dimensions of the prostate could not be known, that it might be hypertrophied, and in ninety-nine cases out of a hundred the posterior part is very thin, which increases the chances of penetrating beyond it; and M. Michon also objected that the bilateral method has been proved successful, while Ledran's method, as practised by M. Lenoir, is a bastard lithotomy, an operation "*en deux temps*," in which it cannot be known what is cut, nor can the incision be extended as required: there is every risk of cutting beyond the prostate, and there is a large projecting angle in the wound. With the bilateral operation, on the contrary, the operation is done at once, we are nearly certain of our incisions, the result is certain, the largest stones may be extracted, and, if the prostate is hypertrophied, both sides are divided equally by an ellipsoid incision, which is the most advantageous. The bilateral operation is not more painful to the patient, and is less difficult to the surgeon, and admitting the calculus to be too large for extraction, the multiplied incisions of M. Vidal are more easily made. In M. Lenoir's rejoinder he remarked that the success of the two operations cannot be compared, because the horizontal incision has been much less frequently resorted to than the bilateral. He maintained that when it is necessary to have a large opening into the neck of the bladder, the bi-oblique operation is not the best; it holds the middle place between the lateral operation and the operation of Ledran. In the case before him no other operation would have answered. The few extra seconds which it occupies is not an objection; and as respects hypertrophy of the gland, the circumstance, far from proving an inconvenience, would be most favourable to the success of the operation.\*

\* Gazette des Hôpitaux, Dec. 13, 1846.



In the discussion which took place at the Académie de Médecine, on Lithotomy and Lithotripsy, on the report of an operation by the bilateral method, by M. Raynaud, M. Roux concluded his remarks by stating, finally, that he considered lithotomy must still remain the general, and lithotripsy the exceptional method, and that in children, in all cases, the former only is admissible.\*

23. *Hydrocele*.—In a discussion at the Academy, M. Blandin referred to a series of comparative experiments which he had performed with iodine and vinous injection, to determine the certainty and efficacy of each, and the degree of pain produced. The iodine injection consisted of about seven drachms of tincture of iodine and fourteen drachms of water. The experiments, as far as they went, were decidedly in favour of wine, the injection of which was attended with less pain, and the cure was more rapid and more complete.†

The "Southern Journal" contains a "case of Hydrocele cured by Electro-Magnetism," by Dr. Ogier.‡ An old gentleman, with enlargement of the prostate gland and diseased bladder, had also a hydrocele. For the affection of the bladder it was thought proper to apply the electro-magnetic battery, and pass the shock from the lower part of the spine through the bladder, in all directions. Whilst making these applications, Dr. Ogier felt desirous of knowing what would be the effect of passing the electric fluid through the hydrocele, and, therefore, determined to try it. The wires were applied to the tumour, and the electricity allowed to pass through it in every direction. This application was made every day for a fortnight, and each application was continued from six to eight or ten minutes. In about ten days the swelling was increased, the testicle itself became enlarged, and painful when pressed, the scrotum was red or slightly oedematous, and the whole tumour assumed very much the appearance of a hydrocele two or three days after the operation by injection. It remained in this condition two or three days, and then gradually subsided; and, three weeks afterwards, the parts became of the natural size. It is now more than two months since the application of the battery. The testicle remains in its normal state, the hydrocele is evidently radically cured. Dr. Ogier is not aware that hydrocele has ever before been treated by the above method. As it produces no constitutional irritation, and is of such easy application, would it not be expedient in recent cases, when there is not much thickening of the tunica vaginalis, and also in hydrocele occurring in old debilitated subjects?

24. *Fistula in Perineo*.—Two patients, with this disease, came under M. Jobert's treatment, and are reported in the "Gazette des Hôpitaux."§ In one a stricture existed which had to be destroyed by armed bougies. The scrotum was indurated. A catheter was introduced by the inferior opening, and left there a sufficient length of time to facilitate the relief of the neighbouring parts. Several fistulae formed. When the stricture allowed a catheter to be introduced into the bladder through the urethra, and that to be withdrawn which had been introduced by the fistula, M. Jobert resorted to autoplasty, for the purpose of renewing the loss of substance in the perineum by a plan analogous to that adopted by Cooper and Chopart. An incision was made in the anterior and inferior part of the buttock, a second at the root of the perineum; the flap was dissected towards the thigh; but as it yielded with difficulty a deep incision was made, which favoured the bringing the two lips of the wound together: the superior fistulae were rapidly cured; but the inferior one, in which the catheter was placed, and the presence of which had produced a mucous canal of new formation, for a long time resisted all efforts at obliteration. This want of success induced M. Jobert to modify his opinion as to the utility of allowing a catheter to remain in perineal fistulae. He now not only believes it to be useless, but a frequent cause of the most serious accidents.

#### § VIII.—*Variæ*.

25. *Bleeding from the Foot*.—The "Medico-Chirurgical Review" copies the following from M. Malgaigne's Surgery, considering that the operation is too sel-

\* Gazette Méd. de Paris, Jan. 4, 1845.

† Nouvelle Encyclogr., April 1846, p. 231.

‡ The Boston Med. and Surg. Journ., July 1846, p. 368.

§ Oct. 24, 1846.

dom had recourse to in this country in the treatment of affections of the portal system and generative organs.

The internal saphena vein may be opened in front of the internal malleolus, or the external saphena in front of the external malleolus; but the latter is seldom large enough to be opened when the internal is not.

The patient, seated in a chair or at the edge of his bed, first places his feet in hot water until the veins are very apparent; then the surgeon selects the foot, wipes it, rests it on his knee, protected by a napkin, and places the ligature two fingers' breadth above the ankle, moderately tightening it, and securing it with a bow on the opposite side. He then explores the vein, puts the foot again in the hot water, prepares his lancet, retakes the foot, and opens the vessel. Care must be taken not to prick the bone and break off the point of the lancet. If the blood flows in a jet it is caught in a basin, if it only dribbles slowly, the foot should again be put in the water. We can then only judge of the quantity by the time or redness of the water. When the bleeding is supposed to be enough, the foot is taken out of the water and wiped, and a compress and figure-of-eight bandage applied. Care must be taken lest the water be too hot, or the foot plunged in too deeply. It is said that the weight of the column of the water tends to coagulate the blood, which stops the mouth of the opening. On this account the foot should be kept only just covered, and the wound wiped from time to time. It is well also to make the patient move his toes.\*

26. *Epistaxis*.—M. Pirry succeeded in arresting a nasal hemorrhage which had continued, in spite of the ordinary remedies, for fourteen hours, by compressing the common carotid. The compression was sustained for twenty minutes, and there was no relapse.†

27. *Hair Lip*.—Dr. Dawson, of Dungannon, operated seven hours after birth: the pins were removed in forty-eight hours, and in two days more the union was so perfect that the adhesive straps were removed. There was no fissure of the palate. Dr. Dawson is confirmed in his determination to operate in similar cases soon after birth.‡ (Vide Half-yearly Abstract, Vol. II. p. 182.)

28. *Hypertrophy of the Lymphatic Glands*.—An instance of an extraordinary case, seated in every region of the body of an adult female, occurred to M. Velpeau, and is recorded in the "Annales de Thérapeutique." The tumour varied from the size of an almond to that of a hen's egg.

29. *Enormous Tumours*.—In Dr. Parker's (of Canton) "Notes of Surgical Practice amongst the Chinese," cases are described of the tumours so frequent in that country. A beggar in Macao had one on the right side of his face, which in ten years increased to two feet six inches in circumference. Two elliptical incisions, each eighteen inches in length, were required to encircle the base, and the operation occupied about forty minutes. The structure of the tumour was glandular, but there were a few small cavities in the interior, some filled with a mucilaginous fluid of a dark colour, others with a yellowish limpid fluid. Portions of the tissue cut harder than the rest, and were as firm as cartilage. Secondary hemorrhage occurred, but the patient recovered in three weeks. In another case, a man, aged 55, had a tumour of about twelve inches in circumference, below the angle of the jaw on the right side, which was successfully extirpated.

30. *The Surgical Adjuster*.—The "Archives Générales," for August last, contains an article, illustrated by a series of very beautiful plates, on Dr. Jarvis's apparatus, described in our Third Volume (p. 208), for the treatment of dislocation and fracture.

---

## VENEREAL DISEASES.

31. *Syphilis*.—M. Ricord's researches have led him to a conclusion at variance with the opinion generally entertained in this country, viz., that venereal diseases are as ancient as the world, and that if the philosophical history of the world be true, it may in one sense be affirmed that gonorrhœa had its origin anterior to the

\* Med. Chirurg. Review, Oct. 1846.

† Gazette des Hôpitaux, No. 4, 1846.

‡ The Dublin Med. Press.

existence of man; for discharges of this nature are known to be very common in the canine race, and man was the last of organized beings which appeared on the face of the globe. No person, according to this surgeon, can affirm that syphilis did not take its origin from the lower animals. M. Ricord regards as incontestable facts, that the earliest notice of gonorrhœa is to be found in Leviticus, that Galen gives a perfect description of a blenorrhagia contracted by sexual connection, and that Avicenna treats of some of its consequences. The study of the history of medicine appears to have left no doubt on his mind that the ancients were well acquainted with the primary venereal affections; but he admits that they were ignorant of the fact that syphilis is caused by a specific virus; that they were unacquainted with the conditions under which these affections are communicated from individual to individual, and of the consequences of the primary affections; that they were ignorant, in fact, of the relation of cause and effect, as respects this subject. Their general class of leprous diseases was, acknowledgedly, a chaos of widely different affections, comprising, in his opinion, many of the secondary symptoms resulting from venereal diseases. M. Ricord enters into a long disquisition, and quotes many authorities to prove that the outbreak of syphilis in 1494 was not regarded by eye-witnesses as a new disease, and that venereal diseases are not of modern origin.\*

In our general Report on Syphilis (Vol. IV. p. 228), some interesting and important remarks and cases were introduced illustrative of the contagiousness of secondary syphilis, but we were obliged, by limitation of space, to omit the observations of M. Rizzi, of Milan, who has the charge of a large hospital in that city, and an ample field for recording facts relating to congenital syphilis. According to M. Rizzi, if a woman contracts specific ulcerations on the breast by suckling an infected infant, mucous tubercles very frequently develop themselves on the vulva and about the anus; but this, it is stated, is not all: the syphilis, although secondary, is transmissible by contact, so that a perfectly innocent woman may communicate the disease to her husband, and it behoves the medical attendant to be well apprized of this fact, as upon his knowledge of it not only the health, but the peace of mind and the honour of individuals must rest.

Of 100 individuals with chancres on the breast from impure lactation, or on the mouth or throat, derived from contact with an infected infant, 34 had tubercles on the vulva, 19 syphilitic angina, 2 iritis, 14 tubercles of the vulva and angina simultaneously, 5 tubercles of the vulva and others disseminated over other parts of the body, of divers complicated symptoms, 6 tubercles of the vulva, angina, tubercles on the skin, and iritis, and 19 no secondary symptoms.

In nurses, as well as in men infected by them, M. Rizzi has remarked that tubercles are the most common form of secondary symptoms, and angina is frequently superadded. A discharge, vegetations, and exostoses are very rare, and buboes, when they occur, consist only of swelling and tension of the sub-maxillary or axillary glands.

In 53 infants, the disease manifested itself one month after birth in 33; at the expiration of two months in 11; of three months in 4; of four months in 4; and in one only after the expiration of eight months. These statistics show how easily parties may be deceived as to the condition of infants that have been subjected to the syphilitic poison, and how readily nurses may be exposed to the syphilitic poison from infants taken by them to nurse, without the slightest apprehension, whose parents even might not have a suspicion of the existence of the disease.†

32. *Gonorrhœa*.—In the Report on Syphilis, already referred to, we stated that the opinion that gonorrhœa and syphilis depend upon the same specific virus is no longer entertained by the highest authorities. Experiment appears to have set this important question at rest. Mr. South's edition of "Chelius"‡ contains a valuable article on the general subject of gonorrhœa, in which many of Ricord's views on this point are reproduced. We here find it observed, that the assertion that "one woman, having connection with several men, could give chancres to some, and to others gonorrhœa and buboes, whence the conclusion as to the identity of the nature of these different actions, the principle being always the same in all, and the difference only in the form determined by the locality and degree

\* Gazette des Hôpitaux, Oct. 29, 1846.

† Gaz. Med. di Milano, and Gaz. Med. de Paris, Oct. 24, 1846.

‡ Part II. p. 165.



in which the cause acts," is now completely disproved. "If such reasoning have remained for a length of time without refutation, it cannot," says Ricord, "be now persisted in. Since I have applied the *speculum uteri* to the study of venereal diseases, the hitherto inexplicable enigmas are reduced to the most common and simple facts. With the aid of this instrument, I have found that a woman may be affected, at the same time with gonorrhœa and deep chancres of the vagina or uterus, and the gonorrhœa alone show itself externally: apparently affected with gonorrhœa, she could very easily communicate chancres and gonorrhœa together, or only one of them, according to the predisposition of the persons who exposed themselves to the infection. But we can affirm, from numerous observations, that whenever we have examined women who have communicated disease, we never found a chancre had been produced by a discharge without ulceration in the sexual organs of the person who had communicated it. Inoculation has confirmed what observation of ordinary contagion, better made with the assistance of the *speculum*, had established. In women, gonorrhœa, considered throughout, in the whole extent of the organs of generation, in its different phases of acuteness or duration, and inoculated in the same manner as employed for chancre, produced no result, whenever the mucous membrane was not actually the seat of chancre."\*

In reference to the opinion that "the cause of chancre and gonorrhœa being the same, the difference in the form depends upon the tissues affected, and that thus the syphilitic virus applied to a non-secreting surface produces a chancre, and the pus of chancre, upon mucous membranes only, produces gonorrhœa," Ricord says positively. "We know that gonorrhœal matter never produces chancre on the skin, and that applied to mucous surfaces, when it acts, it only produces a discharge. The gonorrhœal secretion, applied to the mucous membrane of the eye, has never produced chancres of the conjunctiva, or of the eyelids, nor, on the other hand, has the muco-purulent secretion of gonorrhœal ophthalmia ever produced chancres by inoculation or otherwise, although the eyelids are susceptible of being affected by chancre. We may add, that the muco-pus of a balanitis or posthitis, consequent on an impure coition, or produced artificially by an irritant, has never furnished a result by inoculation, and that these affections, therefore, cannot be followed by symptoms of constitutional pox, whenever they have existed without chancres."† In regard to the two "pretty frequent and regular consecutive symptoms of gonorrhœa—buboes—(yet far less frequently than after chancre,) and swelled testicle, Ricord has ascertained, by inoculation, that the pus from such buboes, which rarely terminate in suppuration, like the pus from simple abscesses, does not inoculate. The pus from such buboes frequently corresponds with strumous, and not with syphilitic affections. As to swelled testicle, which still more rarely suppurates, the pus never produced anything by inoculation."‡

The following are the inferences which Ricord draws from his observations on the inoculation of gonorrhœal matter:

"1st. The matter of gonorrhœa, applied to a healthy mucous membrane, causes gonorrhœal inflammation, so much the more easily, the nearer it approaches the purulent form; and, therefore, contrary to the opinion of Whateley, the less mucous its nature.

"2d. Under no circumstances can it produce chancre; but, as an irritating matter, like that of coryza, for instance, it may excoriate the skin, with which it remains some time in contact; but it never produces a specific ulcer.

"3d. The consensive, undoubted, and regular symptoms of gonorrhœa do not furnish an inoculable pus.

"4th. The symptoms of constitutional syphilis are not the consequences of gonorrhœa. In all the cases in which authors mention that it was an antecedent, the frequency of which precisely corresponds with that of masked chancres (chancres larvés), the diagnosis was not correct, the diseased surfaces not having been examined.

"5th. Lastly, the only correct means of diagnosis in the present state of science, is inoculation. Every gonorrhœa which is tested by inoculation in its various

\* Pp. 52-3; Fr. edit., pp. 118-19.

† P. 58; Fr. edit., pp. 129-131.

‡ P. 58; Fr. edit., p. 132.

periods, without producing any result, is only a simple affection, and incapable of communicating syphilis, whether primary in another subject, or constitutional in the one first affected.\*

That discharges from both the male and female genitals have produced, in some instances, gonorrhœa, and in other chancres, every one who has had the slightest opportunity must have observed; and hence has arisen the opinion, long held by many surgeons, that the diseases were one and the same. But the examination of the vagina with the speculum, so largely practised, and on such good grounds strongly advocated by Ricord, explains the cause of these two sets of symptoms, by showing that in the vagina, and often even on the *cervix uteri*, chancres may exist, whence may be produced a discharge, which, without such examination, carelessly pronounced to be gonorrhœa, will cause chancre, or, if accompanied with gonorrhœa, may produce in one person chancre, in another gonorrhœa, and in a third both diseases at the same time, whilst the infecting party is presumed merely to have gonorrhœa. The use of the speculum, therefore, if only as a means of diagnosis, cannot be too strongly advised. In males it cannot be employed to examine the urethra; in such cases, therefore, it is well if the practitioner have any cause for suspicion, to inoculate the matter from the urethra into the patient himself. If the discharge be simply gonorrhœal, no inconvenience will ensue; but if a chancreous sore should follow the inoculation, it is a proof that the disease is syphilitic, and that it must be treated accordingly.

33. *Treatment of Gonorrhœa.—Of the ectrotic or abortive treatment.*—The journals contain some lengthy articles on this important subject, and we shall commence by laying before our readers the view entertained respecting it by M. Ricord.†

As long as there are no acute symptoms, such as pain in urining or during exertion, &c., and the passage of the urine occasions only a slight irritation, M. Ricord affirms that, whatever be the duration of the disease, the abortive treatment may still be employed. This is important, for there are practitioners who believe that the abortive treatment has not succeeded in their hands, although resorted to within the first twenty-four hours. Time has nothing to do with it:—sometimes pneumonias will be met with, which in less than twenty-four hours have arrived at their third stage. The *nitrate of silver*, used either in substance or solution, is the most powerful modifier of the mucous surfaces that is known. M. Ricord states that it is not a panacea, but when the patient has been seen early enough, and the exact seat of the urethral inflammation has been ascertained, this substance, by means of Lallemand's *porte-caustique*, has frequently been applied with great success. Preference, however, should be given to strong *injection* of the solution, which, employed at an early stage, is an excellent mode of treatment. After making the patient pass water, and gently squeezing the last drops from the urethra, the injection must be thrown in by means of a glass syringe, the object being to make it quickly traverse the entire length of the urethra. If the patient be allowed to inject it slowly, the mucous membrane puckers up, the canal is narrowed, and the fluid does not pass. It should be allowed to remain in the urethra about half a minute before it flows out. M. Ricord's account of the effect is that severe pain in the part is felt, as if the canal contained pins and needles. The patient should be advised (after the injection has been thrown in) that there will be a temporary increase of pain and discharge, difficulty of urining, together with a more or less abundant exhalation of blood. Such augmentation of the mucoso-purulent discharge may continue from six to ten hours, the pain, however, usually ceasing at the end of two or three.

To the severe pains succeeds a complete collapse. The urine is passed with ease, and the discharge sometimes quite dried up. Occasionally the patient is thus cured at once: but, unless he observes for a while the greatest precautions, the discharge in a day or two will reappear. As long as it does not we must rest content: and if it does, a second injection, and sometimes a third, must be had recourse to. But generally, the discharge has become so slight, thin, and mucous, that mere *astringent* injections suffice. However, experience proves that caustic injections, unaided by internal medicines, do not furnish complete results, although

\* P. 59; Fr. edit., p. 133.

† The Medico-Chirurg. Review, Oct. 1846, p. 553.

M. Ricord has never seen the ill consequences described by some as having followed their employment. Used alone, then, he rejects them; but in connection with internal medicines they constitute an admirable method, and are, without any doubt whatever, the best means known for cutting short the progress of this disease.

Dr. C. D. Arnott, of Gorleston, has given publicity to his opinions on the same subject in an article on the "Ectrotic or Abortive Treatment of Gonorrhœa."<sup>\*</sup> He regards this disease as a true urethritis, of a specific nature, running its course like every other specific inflammation; and he believes that a speedy subsidence of the action may be obtained by remedies applied before the inflammation has reached its acme, but not afterwards. He considers nitrate of silver has the power of arresting both simple and specific inflammation. The endermic application of this salt speedily subdues erythema occurring on any part of the surface, and simple cases of paronychia, where the inflammation is superficial, timely treated with it, appear to be completely under its control. The initiatory stages of chilblain are reduced by it more effectually than by any other mode of treatment, and it arrests many affections of a similar nature with equal certainty. Similar effects are observed to follow its employment in cases of a specific character, as the stings of gnats, bees, wasps, &c.; and the undoubted service it has rendered in the hands of Mr. Youatt, in the most severe form of poisoned wound, observed in this country—the bite of rabid animals—tends to prove that, in addition to its sedative quality, it has the power of affecting a decomposition or neutralization of the virus, or a complete arrest of the zymosis, by which the poison, in these cases, is multiplied in the system.

Dr. Arnott believes that the employment of nitrate of silver in the early stages of gonorrhœa will prove highly serviceable, due regard being paid to the selection of cases. Its operation was observed on four occasions, in all of which it was successful.

The mode of employing the remedy is by an injection composed of twelve grains of the salt to one ounce of water, about two drachms being thrown into the urethra, the penis being at the same time elevated and compressed at about two inches from the orifice. No urine is to be passed for half an hour after the injection. The immediate visible effect is to form a complete film on the surface of the urethral lining, a main agent in effecting a cure, as proved by the great diminution of pain which the patient experiences during micturition.

Dr. Arnott regards the nitrate of silver as open to the one objection of being of use only in the *early stage* of the disease. When gonorrhœa has advanced to the suppurative crisis it is beyond the influence of the remedy, and should the disease progress after one or two injections, the case must be consigned to the ordinary tedious treatment.

Mr. M'Donald, who had previously published a paper on the use of the nitrate of silver in this disease, agrees, in the main, with Dr. Arnott, but there are two points in which these gentlemen slightly differ:† 1. *As to the cases in which the remedy is most efficacious.* Mr. Herapeth and other friends of Mr. M'Donald believe that the nitrate employed as an ointment is of more use in chronic than in acute cases; and although Mr. M'Donald admits that, according to his own experience, it is more successful in acute than in chronic cases, and states that he has used it in some of the latter without any good result; he nevertheless, regards it as a more successful plan of treatment than any other. 2. *As to the best mode of its exhibition.* Mr. M'Donald objects to the injection; from his own observation he believes that great risk of cystitis is incurred by injections. No such risk, however, is to be apprehended from the use of an ointment, which is more manageable, and enables the nitrate to be applied to the lacuna magna. It should be smeared on a bougie of the size of the urethra, introduced about three inches, and retained for about three minutes, after which the penis may be immersed in warm water.

In a subsequent communication Dr. C. D. Arnott‡ remarks, that the disease having advanced to copious purulent elimination, ectrosis becomes unwarrantable

\* Lancet; Dublin Med. Press, Aug. 12, 1846.

† Ibid., Sept. 26, 1846.

‡ Lancet, Oct. 17, 1846.



Sudden arrest of the discharge is, of all things, most likely to prove untoward. If it occur, aggravation of the original mischief is almost certain, and some of the severer complications of the malady can scarcely fail to supervene—orchitis—cystitis—nephritis. A gradual declension, only, is safe, and this should be achieved by the ordinary antiphlogistic means. A partial subsidence being effected, nitrate of silver again becomes most useful—not to *abort* the disease, but as a stimulant, to relieve the congestion of the urethral lining, and to impart to this membrane its natural tone and function. For this purpose three to five grains of the salt dissolved in an ounce of water will be found safe and effectual.

As respects the supposed danger of urethral injections, Dr. Arnott believes that the urethra is not normally a patulous canal, but offers considerable resistance to the backward passage of fluids, more than sufficient to resist the ordinary propelling power of the syringe; and when, in addition, urethral compression is resorted to, he believes that the supposed danger has no existence. The application of ointment, as recommended by Mr. M'Donald, has accordingly, in this practitioner's eye, no superior advantages.

On this subject, an article has presented itself to us, by Dr. Debeney, who has made numerous experiments for the express purpose of ascertaining the results of the various modes of applying nitrate of silver to the mucous lining of the urethra, for the cure of gonorrhœa.\* Mr. M'Donald having recommended the introduction of a bougie, as above described, coated with an ointment composed of "one part of nitrate of silver to seven parts and a half of lard," for about three inches, and stated, that in the first stage one application is sufficient for a cure, and that in other stages of the disease, two or three applications are necessary, Dr. Debeney agrees that the first of these propositions is incontestable; that it has been proved by an immense number of trials that one cauterization alone, by whatever method it be effected, is sufficient to arrest a gonorrhœa at the commencement; but the second proposition is a complete error, and involves an infallible deception. After the earliest stage has passed over, when the inflammation extends further into the urethra, and especially in the chronic state, according to Dr. Debeney, we may cauterize the anterior half of the canal a hundred times, and no effect will be produced on the posterior portion. To produce the effect the cauterization must be extended even to the neck of the bladder. Dr. Debeney believes that in the first case cauterization is not necessary, since the ordinary injections will not fail to answer the purpose required, and that a bougie smeared with caustic ointment is required only in old obstinate cases, where the tissues are beginning to be modified, and a more energetic remedy is required. For the purpose of cauterizing the urethra to a certain extent, the ointment is doubtless far preferable to the ordinary *porte-caustique*. In such cases Dr. Debeney has sometimes used the bougie, smeared with an ointment composed of eight grammes of caustic to thirty of ointment; but its application, besides producing great pain, is an operation of considerable difficulty. The oil with which it is covered, to protect the parts before it reaches that portion of the canal to which it is to be applied, is an obstacle to the action of the caustic; and contrary to Mr. M'Donald's opinion Dr. Debeney thinks that injection, well managed, guarantees a more efficient application of the salt to the mucous membrane, and to the *cul-de-sac* of that membrane. Injection is generally less painful, easier, and more certain; and if a more powerful effect is required it is only necessary to concentrate the solution, when the sole object for which the bougie is employed may be obtained.

But, although Dr. Debeney thus disapproves of the employment of nitrate of silver generally, there is one special indication which he considers this treatment will fulfil better than any other that has been proposed, viz., the arrest of the gonorrhœal inflammation in the female urethra. Injection in this case is scarcely practicable, in consequence of the difficulty of closing the urethra upon the syringe, so that the liquid may penetrate, and not be forced back by the contractions of the canal. The stick of nitrate of silver is very inconvenient, and exposed to the danger of breaking; the bougie is, on the contrary, easily applied, and fulfils the indication most completely.

We may close this part of our Report by just stating, that in our own practice, of late, the use of the nitrate-of-silver injection in the very earliest stage, under

\* Gazette des Hôpitaux, Dec. 29, 1846.

the circumstances described by M. Ricord, and, in very slight cases, at a somewhat later stage, has proved generally successful, the disease has been arrested in its course, and no untoward circumstances have arisen.

*Internal, indirect, or revulsive medication.\**—Ricord confirms the opinion generally entertained that the most efficacious of medicines are copaiba and cubebs, and after them, but in a far less degree, turpentine and balsams. These sometimes act *revulsively*; for the discharge has been evidently arrested after purgation by copaiba or cubebs; but, as Cullerier justly stated, such a cure is not permanent. The specific, not the purgative action of copaiba is that which must be sought for. The action of such substances really takes place upon the urinary passages, through which they are eliminated. What best proves that it is by the medicinal urine, loaded with the active principles, is, that it is especially in the cases in which the substance imparts its odour to that fluid that cures take place. M. Ricord had a patient in whose urethra, affected with discharge throughout its length, was an aperture, dividing it into an anterior and posterior portion. Copaiba was given, which cured the discharge in that *part of the canal only over which the urine was enabled to flow*. A cure cannot be obtained by injecting copaiba or cubebs; but such a proceeding may aggravate the case. There is a change operated by the living chemistry which imparts to the aromatic principle diffused in the urine its curative properties.

*Copaiba*, in some patients, soon produces nausea and vomiting, and in others purging. In some, again, it induces an erythematous eruption of the skin, usually but of short duration. In a few cases, in which its odour is not perceived in the urine, great disturbance of the nervous centres is observed. *Cubebs* is much more easily tolerated than copaiba, and much more rarely induces ill consequences. Whatever substance is employed, it must be given from the very first in *sufficient doses*, so that the economy may not accustom itself to its presence too easily. For *copaiba*, the ordinary dose at first should be four drachms per diem, divided into two or three portions. As much as twice or three times this quantity may sometimes be required. Of *cubebs*, the medicinal doses which M. Ricord prefers range from six to ten drachms per diem. As long as the dose seems curative he recommends us to be content; if it disagree with the patient it should be diminished. It must be continued some time after the discharge has subsided. As to the pharmaceutical forms of these medicines, the less they are modified the more powerful is their action. Cubebs, especially, should be taken in as nearly its natural state as possible. Few persons, however, can take copaiba in this manner, and the following is the modification of Chopart's mixture, which M. Ricord has found most beneficial. Balsam copaib., mint-water, lettuce-water, orange flower water, syrup of poppies, of each equal parts; make an emulsion with tragacanth powder. Three spoonfuls are first to be taken daily, and the number increased, as the tolerance becomes established, until ten or twelve are taken. A little Seltzer-water after each dose corrects the tendency of the medicines to rise; but few patients are able to continue it for long. For those who cannot take copaiba by the mouth, it must be given by the rectum; but, so administered, it is a most uncertain remedy, and should never be resorted to, unless no other means present themselves. The following is the formula: Balsam, six or seven drachms; decoction of poppies, ℥ij; yolk of egg, 1. M. The rectum must be previously emptied by an ordinary enema, and then this one administered almost cold. It should be given at bed-time, and the patient must endeavour to retain it all night, to aid him in doing which a little opium and camphor may be added to the enema. The introduction of capsules is one of the triumphs of pharmacy. M. Ricord prefers Raquin's gluten capsules to those formed of gelatine, the former containing a little magnesia. M. Ricord has endeavoured to prepare similar ones less expensively. Thirty parts of copaiba are solidified with one and a half of magnesia, and then covered with gelatine. With *cubebs* we usually associate a little extract of *rhubarb*, or frequently powdered *alum* (i. e. two parts of alum to thirty of cubebs-). In some lymphatic or chlorotic-looking subjects carbonate of iron should be combined with the cubebs. The patient's drink should be in small quantity. Some Seltzer water, with a little syrup of oranges, or some infusion of uva ursi, with a little nitrate of iron (six or eight

\* Lib. cit. p. 554.

parts to 500), and syrup of Tolu, are the best. Cubebs and copaiba are often given together. M. Ricord employed them separately: so that if either of these medicines failed he could have recourse to the other; but yet, in a few cases, where copaiba cannot be supported alone, the mixture of the two is tolerated.

*Hygienic treatment.*—M. Ricord states, that if it is wished to derive all the advantages possible from the use of injections simultaneously with the administration of copaiba or cubebs, the hygiene of the patient must be carefully attended to. His diet should be farinaceous, and his drink spare in quantity, so that the urethra may be irritated as little as possible by frequent urining. Tisans must be forbidden if the abortive treatment is wished to succeed; but when the patient will not be satisfied without them linseed-tea is one of the best. Exercise must be taken as seldom as possible, and all thoughts, books, &c., calculated to excite erections, avoided. Intellectual pursuits have at such times a useful effect in driving away lascivious thoughts. M. Ricord recommends as an *anaphrodisiac*, camphor, which acts as powerfully on the genital organs as belladonna does on the iris, and he employs it thus—R Camphor, thrydace, ʒi fitty grains. Mix and divide into pills 20. Five or six of these are to be taken daily, especially in the evening. For those who cannot take pills, he orders twelve grains suspended by yolk of egg, as a *livement*. Some persons add opium to the camphor, but this only destroys its sedative effects.

*The acute stage.*—Suppose these means have not succeeded in cutting short the disease, and the gonorrhœa is completely established. Hygienic precautions must be insisted upon, abundant and diluent drinks, and warm baths (about 92°) ordered. These last, Ricord states, may be employed for an hour; but for a less time, or not at all, in susceptible patients, in whom they sometimes induce erections. Hip-baths are to be prohibited entirely, as always hurtful. Saline purgatives and enemata, the use of the suspensory, hard cool beds, rigid diet, and the camphor pills, are to be ordered. These means will usually carry the patient through the acute stage, but sometimes powerful antiphlogistics may be required. When leeches are employed, they must always be applied to the perineum, not to the penis. Some practitioners employ caustic injections and copaiba in this acute stage, and they may have met with some cures. In the great majority of cases, however, they fail, and thus discredit a useful means when judiciously used. M. Ricord forbids injections of any kind whatever at this period; so, too, in regard to copaiba, &c., it usually does harm or is useless, only disgusting the patient and preventing his taking it at a more appropriate period. There are, however, certain exceptional cases in which the pain in urining will yield to nothing but copaiba, which then becomes a true sedative. When the antiphlogistics have been discontinued, and the discharge still continues, recourse may then be had cautiously to this substance or the cubebs. Among the *accidents of the acute stage* may be mentioned *dysuria*, which, as it is only one stage removed from retention of urine, must be carefully watched. Antiphlogistic means should be still more energetically employed, and the patient be directed to allow his water to pass while the penis is kept under tepid water. In *acute retention*, local or general bleeding at once often affords relief. An enema formed of three ounces of *cold* decoction of poppies and a few drops of laudanum may have the same effect. If these means fail, the patient must be placed in a bath at a very low temperature; but here precautions are required, for if the bath does not cause the patient to urinate, it augments the retention. If, however, twenty-four hours have elapsed without relief, the use of the catheter must be no longer delayed, for the longer it is postponed, the more difficult and painful will its introduction prove. Whether the instrument is to be retained or not, will depend upon the duration of the retention and the difficulty of introducing it. Sometimes the retention is produced by the patient restraining himself too long from urinating, in dread of the pain this will cause him. The complication of *bubo* and *urethral abscesses* is a simple inflammatory accident, to be met by antiphlogistic measures. They should be opened at the earliest period that suppuration is manifested. *Chordee* is best treated by large doses of camphor, as are also *urethral hemorrhages*. These last, in a moderate degree, are useful by the local depletion they induce; and when in excess, they are best restrained by the external application of ice and slight compression, or by means of cold urethral injections. *Inflammation of the neck of the bladder* is one of



the most tormenting affections, both for patient and practitioner. The antiphlogistic measures must be vigorously pursued, but they often fail to give relief. A small cold enema, containing a little laudanum, given twice a day, will often relieve the pain in a manner that nothing else can.

*Chronic stage.*—In the great majority of cases, the disease is not cured upon the disappearance of the inflammatory symptoms. M. Ricord lays down the principle, that as soon as these have diminished, less relaxing methods must be adopted; drinks must be more restricted, and baths left off, as nothing reproduces or prolongs the affection more than an incautious continuance of these last. The camphor must be continued, and copaiba and cubebs resorted to. The use of irritating injections must not be had recourse to until four or five days after using the balsam; but, if the disease then continues stationary, we must have recourse to them. If the inflammatory action, as manifested by pain, has entirely subsided, strong injections of nitrate of silver will suit very well; but this is not usually the case, and the following is that which M. Ricord prefers: Rose-water, 200 parts; sulphate of zinc, 1 part; fluid subacetate of lead, 1 part. Unchemical as it is, it answers exceedingly well. Three times in 24 hours is quite frequent enough for its use, the patient urining just before employing it. In this way 98 out of 100 cases of gonorrhœa may be cured. In the few cases which resist, the causes of the persistence of the discharge should be studied, and appropriate means applied. Sometimes the following vinous injections succeed in these latter cases: Bordeaux or Rousillon, 150 parts; rose-water, 50 parts; tannin, 1 or 2 parts. To this a little alum may be sometimes advantageously added. Another excellent injection in quite chronic cases, is formed by the *iodide of iron*. Distilled water, 200 parts; iodide of iron, 1-10th or 1-5th part. M. Ricord does not approve of the *bichloride of mercury*, for, if irritating injections are required, the *nitrate of silver* is the best. The former indurates the surface, and risks the production of stricture. When the discharge resists the strong nitrate injection, it will sometimes yield to a very weak one (1-10th part to 200 parts.) In some patients, however weak the injection used, inflammation and increase of discharge result. The patient in such a case should be left alone for a few days, when the discharge will often be found to have ceased.

The treatment of *gleet* or "*military gout*," is very difficult, as no disease is more obstinate. Its obstinacy generally arises from change of structure, and whenever these patients present themselves, *the condition of the urethra should always at once be examined*, or the surgeon may afterwards be accused of producing strictures which already existed when the patient first consulted him. If the canal is free, the copaiba and cubebs should be tried, and then dried turpentine pills (from one to two drachms per diem), giving at the same time *uva ursi* and syrup of tolu as a drink. Sometimes astringents, and ferruginous preparations are useful; and at other times, cauterization of the urethra. Bougies, medicated or otherwise, have often effected a cure. Blistering the perineum or thighs, is sometimes of great service. Cold bathing is another means which may be tried. More frequently than is believed, the persistence of the discharge depends upon prolonged continence, and it is then cured by coition.\*

34. *Gonorrhœal Arthritis.*—Dr. Foucart† has arrived at the following conclusions respecting the pathology and treatment of this obstinate complaint. 1st. An articular inflammation may occur having manifest relations to an existing or pre-existing gonorrhœal discharge. 2d. It may occur under three circumstances: *a.* A suppression of the discharge takes place previous to the appearance of the rheumatism, when the cause of the rheumatism may be either a metastasis, or the circumstance which has produced the suppression. *b.* The discharge may continue and the rheumatism may arise from an appreciable exciting cause, as cold, a contusion, or excessive fatigue; the discharge constituting a predisposition. *c.* The discharge may continue, and there may be no appreciable exciting cause other than the gonorrhœa. 3d. Sometimes, in the last two cases, there is a suppression of the discharge consecutive to the development of the rheumatism, this being very acute. In the latter case, there is no metastasis, but simply a revulsion produced by the inflammatory action, which is more intense in the seat of the

\* Lib. cit. p. 553, from the Gaz. des Hôpit., No. 82. † Journ. de Chirurg., May, 1846.

secondary than in that of the primary disease. 4th. Gonorrhœal rheumatism most frequently occupies but one, or at most two articulations, and principally those of the lower limbs. The knee is its place of selection. These two conditions, being mono-articular, and fixing, for the most part, in a large joint, explains the intensity and obstinacy of the disease. 5th. In a great majority of cases, it is accompanied with violent and frequently with intense pain. In a few cases there is redness of the skin, when it presents nearly all the symptoms of common acute rheumatism. Those are the most favourable cases in which the pain is most intense, giving way in a short time to energetic treatment. 6th. When it commences in a slow and subacute or chronic manner, without pain, without change of colour of the skin or other symptoms, and where a serous effusion takes place into the joint, and also in cases of violent acute inflammation at the commencement not subdued in the earliest stage, gonorrhœal rheumatism is a much more obstinate disease than simple inflammatory rheumatism. Its ordinary duration, under these circumstances, is from six weeks to about four months, after which its termination is, for the most part, favourable. 7th. It terminates in ankylosis or suppuration, more frequently than common rheumatism. 8th. In the acute stage, the treatment should be essentially antiphlogistic, in degree proportionate to the intensity of the disease and the constitution of the patient. Far from endeavouring to bring back the discharge when it has been suppressed either primarily or consecutively, we should treat both the gonorrhœa and the rheumatism so long as they exist together. In the subacute or chronic stage, the treatment should first be revulsive and then resolvent. 9th. Where mercurials have been successfully employed, it is not owing to the specific virtue of the mercury, but to the eminently resolvent powers of the remedy. If the existence of gonorrhœal rheumatism is unquestionable, the same cannot be said of a rheumatismal gonorrhœa. There is not an authentic fact which proves that a metastasis of rheumatism alone can produce a gonorrhœa in a subject who has not had the disease previously.

35. *Gonorrhœal Ophthalmia—its Diagnosis.*—In an admirable work by Mr. Wharton Jones,\* which we shall be called upon to notice more fully in a future volume, when diseases of the eye generally are under review, we find the following remarks on this particular subject:

“Gonorrhœal ophthalmia resembles very much the severest form of the Egyptian ophthalmia. The differences are—that in gonorrhœal ophthalmia, the sclerotic conjunctiva is affected from the very first, and great and inveterate chemosis rapidly forms: whereas in Egyptian ophthalmia, the sclerotic conjunctiva becomes affected subsequently to the palpebral conjunctiva, the chemosis does not form so rapidly, nor is it so inveterate. In gonorrhœal ophthalmia, though the inflammation of the palpebral conjunctiva and swelling of the eyelids may be very great, it is in general not so considerable as in Egyptian ophthalmia; and, at any rate, the papillæ of the palpebral conjunctiva do not become affected in the same way; hence a granulated conjunctiva does not occur in, or is not so marked a result of gonorrhœal as of Egyptian ophthalmia. In consequence of the greater severity of the inflammation of the sclerotic conjunctiva, the cornea is still more liable to suffer and be destroyed in the former than in the latter. Indeed, gonorrhœal ophthalmia is the most rapidly destructive disease the eye is subject to. Males are oftener affected with it than females; but it is of comparatively rare occurrence in either sex. In general one eye only is affected in gonorrhœal ophthalmia; whereas in Egyptian ophthalmia, it is extremely rare to meet with a case in which the disease remains confined to one eye. These differences are not sufficiently definite to serve as a practical means of distinction, and the history of the disease forms the best ground of diagnosis.”

M. Harion states, that he has observed in all cases of ophthalmia produced by inoculation of the muco-purulent urethral or vaginal discharge, in adults or in infants, that there exists, at the same time, an enlarged gland in front of the ear; and he has so much confidence in this as a diagnostic sign between gonorrhœal and catarrhal ophthalmia, as to affirm, that ophthalmia without such a glandular enlargement, is not gonorrhœal, even though the patient should be at the time affected with blenorrhagia.”†

\* The Principles and Practice of Ophthalmic Medicine and Surgery, 1847, p. 116.

† Annales de Thérapeutique, May 1846.



36. *Inflammation of the Eyeball from Gonorrhœa*.—Dr. Jacob\* has described a variety altogether different from the violent and destructive inflammation of the conjunctiva which sometimes accompanies the disease, or is caused by the contact of gonorrhœal matter. It involves the sclerotica, the cornea, the membrane of the aqueous humour, and the iris, and if uncontrolled extends to the lens and retina, causing destruction of the organ and loss of sight. Perhaps, it may be said that it is a rare disease; but following gonorrhœa, and accompanied, as it generally is, by inflammation of the joints, it falls more frequently under the general practitioner than to those who attend especially to diseases of the eye. It is more an acute *corneitis* than an inflammation entitled to the denomination of *iritis*, although it certainly does, when not arrested, extend rapidly to the iris and other parts of the eye. Like the rheumatic and other inflammations caused or modified by constitutional disease, it is liable to relapse, or will return on exposure to cold or wet, or on the recurrence of the disturbance of general health, which originally preceded or accompanied it. There is sclerotic vascularity, but not the brilliant red of inflammation of the iris: it is a bluish red as if veins, more than arteries, constituted the vascular turgescence, and it does not present so conspicuously the radiating arrangement of vessels described as characteristic of the common inflammation of the eye called *iritis*. In fact, it presents more the character of the vascularity which accompanies unequivocal inflammation of the cornea, than the vascularity which accompanies any form of inflammation of the iris, or even of the cornea when inflamed from injury or irritable ulcer. The cornea becomes milky or clouded, not merely at the margin, as often happens in *iritis*, but throughout its entire breadth; and its surface presents that rough appearance which may be considered characteristic of inflammation of this structure. This is remarkable, and proves that the cornea is particularly the seat of the disease; because in *iritis*, whether idiopathic or syphilitic, all the structures composing the cornea remain perfectly transparent, except the membrane of the aqueous humour lining its internal surface, which sometimes acquires a peculiar characteristic speckled or dotted opacity. It has not, however, been observed that the cornea in these cases becomes pervaded by red vessels, as in common chronic *corneitis*; neither has it been seen to become the seat of abscess, or break into ulceration. The membrane lining the chambers of the aqueous humour is engaged in the inflammation, since the speckled or dotted opacity visible in *corneitis* may be sometimes observed, and because adhesions of the pupil are found after the inflammation subsides, which cannot take place without inflammation of this membrane.

37. *Paraphimosis of the Clitoris from Gonorrhœa*.—We find the following observation in Chelius:†—"Not unfrequently the labiæ swell under a sharp attack of gonorrhœa, and the nymphæ, together with the *præputium clitoridis*, become infiltrated with serum, and of considerable size, giving to the latter the appearance of being twisted, similar to that sometimes observed in phimosis or paraphimosis, in the male. Hence Ricord compares it to "a kind of phimosis or paraphimosis, and he speaks of it as occasionally terminating in gangrene, which, however, Mr. South does not recollect to have observed.

38. There is also a paragraph‡ on *gonorrhœa of the nose*, which sometimes occurs during gonorrhœa of the urethra, or whilst there is an enlargement of the testicle from the same cause. The Schneiderian membrane is tender over its whole surface, but not painful; is of a deep red colour, but not ulcerated, and there is a free discharge similar to that of gonorrhœa.

This disease is stated to have been first noticed by Mr. Benjamin Bell, who mentions two cases of it: in the first, "the discharge from the urethra diminished before the testes became inflamed, and, on the discharge taking place from the nose, it ceased entirely." It was treated with an astringent lotion, and the insertion of a sponge moistened in it, up the nose, and was cured in a few days. In the second case, the discharge took place during the continuance of the gonorrhœa, and had existed many years; and, although it had frequently become less, it never disappeared entirely. Various attempts at its cure were made without success; "and, though no other symptom appeared, the patient was advised to undergo a course of mercury; but it is stated that no advantage ensued."

\* Dublin Med. Press, Aug. 26, 1846.

† Chelius's Surgery, part ii. p. 159.

‡ Ib., p. 177.



39. In our Report on Syphilis (Vol. IV.) the opinion of British and Continental practitioners on the efficacy of the *iodide of potassium*, in the various forms and stages of the disease, were pretty fully given, and in particular the views of M. Payen, in his elaborate memoir, published in the "*Archives Générales*," were condensed and embodied; but we were under the necessity of omitting, on that occasion, the writer's remarks on the physiological action and *modus operandi* of this remedy. According to M. Payen,\* the iodide is an alterative; without producing any sensible effect it changes the state of the liquids and solids by modifying permanently the nature of the blood and of the different humours; it is a species of alterant which gives a healthy stimulus to the whole organism, producing also specific effects upon particular organs and tissues. These effects are described under the following heads:—

i. *Action on the mucous membranes*.—1st. It occasionally produces conjunctivitis, under the form of a moderate vascular injection with a slight photophobia, and a slightly increased lachrymal injection affecting both eyes at once, and generally accompanied with irritation of the mucous membrane of the nostrils and a very trifling increase of saline saliva: this affection is sometimes more severe, but if the remedy be withdrawn it always terminates in resolution. 2d. The irritation which it produces in the nostrils is seldom attended with sneezing, and the secretion is much less viscid than that of an ordinary catarrh, with no tendency to pass into a purulent state; although this coryza is occasionally very inconvenient it is rarely of much consequence. 3d. Iodide of potassium occasionally produces ptyalism, the saliva being less viscid than that produced by mercury, and the mucous membrane of the mouth less inflamed with no tendency to ulceration; the saliva has, also, no peculiar fetor, but a saline taste, or a taste of the iodide, and the presence of the iodide can be detected chemically. 4th. It produces irritation in the pharyngo-laryngeal region, consisting of a sense of dryness and even of stricture, with or without a sense of pricking. 5th. In some cases the irritation falls upon the bronchial tubes, producing a dry cough, or accompanied by nothing more than a frothy expectoration: the iodide almost always exacerbates a common bronchial catarrh. 6th. It produces a slight excitement of the mucous membrane of the stomach, increasing the appetite, promoting assimilation, and improving the health in general; occasionally this effect has increased to a real voracity, or to pain in the large cul-de-sac of the stomach of a purely neuralgic character: in a very few instances it produces a true gastric or gastro-intestinal irritation, or inflammation accompanied by vomiting, diarrhœa, and all the symptoms of poisoning: more frequently, however, it occasions only a sero-mucous secretion. 7th. Its action on the mucous membrane of the genito-urinary organs is of the same character: it has been known to reproduce a gonorrhœal discharge after it had subsided, and it will frequently exasperate this disease in its acute stage; although chronic discharges of this nature will sometimes subside under its employment. M. Payen holds that it exercises a curative influence when the gonorrhœa is of a syphilitic character, but the reader will qualify this remark in reference to the distinct nature of the two diseases. The iodide also aggravates acute catarrhal discharges of the vagina and uterus, but in chronic discharges with debility its use is sometimes advantageous.

ii. *Action on the kidneys*.—It generally increases the secretion of urine, and this increase sometimes occurs to a very extraordinary extent, constituting a true diuresis; the salt in these cases can always be detected in the urine.

iii. *Action on the circulation*.—In a great majority of cases it increases the frequency of the pulse, and excites the circulation generally. M. Payen believes this is less the direct effect of the remedy than the indirect result of the increased appetite and the improved nutrition which it occasions. It produces a specific action on the blood, to which, probably, may be attributed the pulmonary and intestinal hemorrhages which occasionally occur under its use. It might be imagined that it renders the blood less plastic, or impoverishes it, and thus leads to hemorrhage; but M. Payen thinks that in a majority of cases hemorrhages result from the excitement of the circulation, for it is unquestionable that most frequently the blood becomes more excitant, more reparatory, and richer under its use.

\* *Revue Médicale*, Oct. 1846.

iv. *Action on the skin.*—It excites the vascular action in the skin, producing, sometimes, redness or a sense of heat, pricking or itching, and sometimes eruptions of various forms and appearances, and seated on different structures. The most common form is psudaceous pustules, appearing indiscriminately on all parts of the body, and frequently accompanied with intense itching. The eruption is sometimes eczematous or erythematous. M. Ricord has seen herpes, rupia, and the spotted disease of Werlhof.

Science has demonstrated that the iodide of potassium, taken into the stomach, is first absorbed, and then eliminated by the urinary secretion, after having produced its physiological and therapeutic effects. Dr. Scharlan\* is reported to have shown, by experiment, that the medicine is wholly eliminated with the urine. Thus, in an individual to whom he administered 350 centigrammes daily, for constitutional syphilis, he detected 345 centigrammes in the urine discharged daily.

Dr. Scharlan's experiments go to the extent of showing, also, at what period, after the ingestion of the iodide its elimination by the kidneys commences, and what length of time is required to complete it.

## INJURIES AND DISEASES OF THE EAR AND ITS APPENDAGES— AURAL SURGERY.

40. Diseases of the ear were, for many years, totally neglected in this country even by scientific writers, although the special anatomy of the organ was well known, and the variety and importance of its derangements admitted. Of late years some excellent treatises have been written on the subject, and particular individuals have devoted their attention to its improvement; but, notwithstanding this, the medical and surgical treatment of these diseases, and the practical applications of science for their relief, are, to the present moment, but little regarded by the profession in general. This is the more to be regretted, because, as isolated affections, the cases are not sufficiently numerous to engage a class of aural surgeons throughout the country. Many of the diseases of the ear are dependent upon the state of the general health; many are propagated to the ears from other organs: and the sequelæ of affections commencing in the ear are often of the most fatal nature; again, of those affections, which are strictly local, but few are remedial. So that, in every point of view, the interests of medical science and practice demand that the individual who professes to practise generally should be thoroughly acquainted with this class of diseases; and yet it has been almost an exception to a rule, that the practitioner should possess even a *speculum auris*, or an *Eustachian tube catheter*; and the neglect of affections of the ear, in those stages in which only remedies are available, has frequently led to the most disastrous results. For these reasons we propose to lay before our readers a Report of the papers now before us, on the subject of Aural Surgery, and to follow this up, in our future volumes, with an abstract of every new improvement, as a part of the general subject of surgical practice.

In reference to diseases of the ear generally, it appears from the works now in the hands of the profession, that the principles on which their pathology is founded are the same as in other diseased parts, the organ itself being made up of structures composed of tissues resembling those composing other parts of the body. The peculiarities lie in the special sense to which the ear is subservient, and as respects its nutritive and molecular functions, in the secretion of a peculiar substance called wax. The organ is subject, in its various structures, to acute and chronic inflammation, erythematic or phlegmonous, which may be seated mainly, or altogether, in the external or in the internal ear, in the auricle, in the exterior auditory canal, in the lining membrane of the canal, in the membrana tympani, in the typanum, in the Eustachian tube, or in the labyrinth; and may arise from various causes, and be attended with different symptoms and sequelæ, and, accordingly, may present different indications, and may demand varying modes of carrying into effect

\* Gazette des Hôpitaux, 27 Sept. 1842.

the same indications of treatment. The organ is also subject to various affections not inflammatory, or not essentially or purely inflammatory; as, for instance, collections of cerumen in the meatus, the admission of insects, worms, and other foreign bodies,—hepatic eruptions, fungous excrescences, tumours, polypi, &c. There is also a class of nervous affections: and to these divisions of aural surgery may be added another, which comprises congenital defects and malformations.

The pathological and surgical observations on the diseases of the ear, by Mr. Toynbee, published in the "Medico-Chirurgical Transactions," are among the most important papers published of late years, relating to this branch of Surgery.\* It appeared from Mr. Toynbee's investigations that the function of the ear is impaired much more frequently than is generally supposed; many persons who consider that they hear perfectly well cannot distinguish the ticking of a watch at a distance of two feet and a half, and in some instances not beyond four or five inches, though the same sound can be heard by a healthy ear seven or eight feet from the head. In forty-one dissections of the ears of patients taken promiscuously from those who died in hospitals and infirmaries, the cavity of the tympanum was healthy in ten only. There was: 1. Simple thickening of the investing membrane in six cases; 2. Membranous bands proceeding from various parts of the cavity, most frequently connecting the stapes with the circumference, in four cases; 3. Slight thickening of the lining membrane with membranous connecting bands in thirteen cases; 4. Considerable thickening with bands in five cases; 5. Suppuration of the cavity in one case; 6. Anchylosis of the base of the stapes to the circumference of the fenestra ovalis in two cases. Mr. Toynbee believes that the most prevalent cause of deafness is chronic inflammation of the mucous membrane that lines the tympanic cavity,† and that the majority of cases commonly called nervous deafness ought to be attributed to this cause.

Mr. Toynbee's dissections led him to the conclusion that the second stage of inflammation of this membrane is characterized by a variety of very important pathological phenomena, and amongst others by the membrana tympani being bound to various parts of the tympanic cavity by firm bands of adhesion, and that deafness is sometimes the result of the high state of tension produced in the membrane by this cause; an opinion borne out by the researches of Wollaston and Müller. Deafness is also produced, Mr. Toynbee believes, by bands of adhesion producing irregular movements in the ossicula—this effect, with noises in the ears like the rushing of waters, &c., resulting from the continued pressure exerted in the context of the labyrinth by the stapes being drawn inwards, as a consequence of the formation and consequent contraction of the adhesion. This opinion has been strengthened by the examination of living persons where the membrana tympani has been removed by disease, or where the contents of the vestibule have not received any impression through the stapes, as in the instance of this bone having ankylosed, where the hearing was more perfect than in those persons in whom satisfactory evidence was obtained, that the disease consisted in the thickened and adherent state of the membrane under consideration. Mr. Toynbee's second paper concludes with an account of the state of the mucous membrane in 120 dissections.

A work has issued from the Paris press on "Diseases of the Ear," by E. Hubert-Valleroux, which is well spoken of. The author establishes a classification according to which, these diseases are most properly made dependent upon the general laws of pathology. There are two classes, the first comprises *Vital lesions*, which require general therapeutical measures for their cure, as inflammation, neuroses, catarrhs, disorganization, &c. The second comprises "Anatomical lesions" which call more especially for the employment of local therapeutical measures, as solutions of continuity, foreign bodies introduced into the ear, occlusions of the auditory canal, &c.

Diseases of the Ear occasionally engage the attention of our Societies.—At the Medical Society of London, some general observations were lately made upon the subject. Mr. Dendy‡ exhibited some bones of the ear, and a portion of the mastoid process of the temporal bone, which had become carious, or had exfoliated in consequence of neglected disease of the organ of hearing. His chief object in

\* Vol. xxiv. 1841, p. 190.

† Vol. xxvi. p. 298.

‡ Lancet, Dec. 26, 1846, p. 694.



bringing forward the morbid specimens was, to direct attention to the absolute necessity of paying early attention to the very first symptoms of ear affection. When presented to us in the early stages, we had usually a controlling power over the disease by remedies chiefly of an antiphlogistic character; but usually cases were presented in the second stage of the malady, when, in fact, the disease consisted in internal abscesses, which were traceable, in scrofulous children, chiefly to dentition, cold, or fever.

The pain in these cases was generally referable to the mastoid cells, and if the disease were not relieved by dry cupping, leeches, or other means, the fluid which formed escaped into the mastoid cells, producing destruction of that bone. It was then desirable to encourage suppuration by poulticing, and taking away the diseased osseous structure. Mr. Headland believed, however, that common earache, as it was called, was often the result of mere nervous pain, and was to be relieved, generally, by simple anodyne fomentations. There was difficulty in the early stages, to distinguish between otitis and neuralgia. In those cases of severe inflammation which were critical, as in scarlet fever, or in scrofulous constitutions, antiphlogistic treatment might be employed; but he feared, as a general rule, that it would be attended with but little benefit, and when suppuration had taken place, as it usually would, it was desirable to give exit to the matter.

With these general remarks, we now proceed to lay before our readers an account of certain special affections of this organ and its dependencies, which have engaged the attention of the profession.

41. *Abscess of the Mastoid Cells of the Temporal Bones.*—The following is a case of great interest: A woman was received into the wards of St. Antoine, under M. Rostan, for a slight abdominal affection which subsided after a few days' treatment. She was afterwards attacked with fever, quick pulse, heat of skin, &c. After a few days, a swelling occurred in the right cheek, with heat and redness of skin, an incipient erysipelas, which soon subsided, but returned on the opposite side; the left cheek swelled and pointed as in phlegmonous erysipelas, but this also soon subsided after the application of a few leeches and the employment of diluents. The fever continued, the patient complained of violent pains as on the first attack, but deep seated, the slightest pressure on the mastoid region produced the most excessive suffering, but there was neither congestion, nor redness, nor fluctuation. M. Rostan diagnosed *abscess of the mastoid cells of the temporal bone*, since there was no phlegmon of the subcutaneous cellular tissue; it was not facial neuralgia; and there were no indications of inflammation of the membranes or substance of the brain. In a few days pus flowed from the meatus, which justified the diagnosis. In Itard's work on "Diseases of the Ear," several cases of this disease are described, some of which were found on post-mortem examination. In some cases of internal otitis giving rise to idiopathic purulent otorrhea, this complication of inflammation of the mastoid cells exists, and produces abscess in the mastoid region, which points through the integuments after destruction of the compact shell which surrounds the spongy tissue of which the mastoid apophysis is composed.\*

This patient was believed to have tubercles of the right lung, and it is not the first case in which this disease has co-existed with suppuration of the mastoid cells. Tubercles have recently been found to exist in the petrous portion of the temporal bone at the same time as in the lungs, and M. Menière, in his investigations on the deaf and dumb, has recently arrived at the conclusion that the two affections are in the relation to each other of cause and effect.†

42. The following case of *Disease of the Lining Membrane of the Ear, followed by Purulent Effusion within the Skull*, communicated by Dr. Hutton to the Dublin Pathological Society, will serve as an illustration of the importance which ought to be attached to affections of this organ.‡

"The subject of the case was a boy, nine years of age, who, for a long period, had a discharge from the left ear. Ten days before his admission into the Richmond Hospital the discharge from the ear was almost completely suppressed; he vomited and had fever, got gradually worse and was brought to the hospital. On his admission he had the head retracted; any effort to restore it to the natural

\* Gaz. de Hôpit., Dec. 12, 1846.

† Vide South's Chelius, p. 661.

‡ Lancet, Dec. 26, 1846, p. 694.

position caused great pain; the muscles of the back of the neck were spasmodically affected, the general aspect ghastly, the eyes straining, the teeth uncovered by the lips, and the whole body emaciated. He understood questions, and returned answers, but in a few hours afterwards fell into a state of coma and died. On examining the body after death, the external opening of the affected ear was found filled with caseous matter. There was an opening in the membrum tympani, and at the insertion of the membrane there was a fungous growth; the mucous membrane lining the cavity of the tympanum was thickened and granular, and adhered firmly to the bones; the ossicula remained. The temporal bone itself was not carious nor softened, nor was its mastoid process at all diseased. The dura mater was separated from the petrous portion, and there was lymph effused between them; the dura mater was sloughy, and there was an aperture in it. The upper surface of the cerebellum was smeared with purulent matter; the inferior surface of the tentorium was similarly smeared; the brain was not softened; no communication could be traced between the cavity of the cranium and the internal ear.\* Dr. Hutton considered this case as an instance of the consequences of suppressed otorrhea: and that such discharges should not always be suppressed without previous preparation, and perhaps the substitution of some other discharge, even in cases where there is no evidence of disease of the bone.

43. From this case we are led to refer to an article *On the Treatment of Otorrhea*, by Dr. Bonnafont.†—Chronic mucous discharges from the ears are stated to be always owing to ulceration of the parietes of the external auditory canal, or of the membrane of the tympanum. These discharges, generally very easily treated in their acute stage, frequently become very obstinate, and terminate in disorders which almost always involve a more or less serious degree of deafness, and sometimes, as in the above case, and in more than one which have come under our own eye, in the death of the individual.

According to Dr. Bonnafont, nitrate of silver is, beyond any doubt, the most useful therapeutic agent that can be employed to destroy the cause of this affection; but it is by no means easy to apply it in a solid state, especially to the membrane of the tympanum, or when the patient is an infant. Still, its application never excites inflammatory symptoms, and the pain produced by it is of very short duration. The solution has the inconvenience of extending farther than required, besides acting less energetically on the affected part, and it has also the disagreeable effect of blackening the surrounding skin and staining the linen. To remedy these inconveniences, M. Bonnafont employs a compound powder made as follows: Nitrate of silver, ʒj; Venice tale. ʒj; lycopodium, ʒj. Mix and grind into as fine homogeneous a powder as possible. This powder should be kept in a stoppered bottle, and excluded from the light. When it is to be applied, the canal must be cleared of any matters it may contain, either by injections or by a sponge; the seat of the ulcerations must be determined, and the powder must be blown upon them through a silver tube, furnished with a cuvette at one extremity. The insufflations must be repeated daily, or less frequently, according to the nature and degree of the affection. This tritling operation, however, requires minute precaution, in order to produce all the good effect which it promises. Thus, if the ulcers are covered with purulent matter, the powder may mix with this and prevent the subsequent insufflation, and even close up the canal, thus preventing the discharge of the secretions, and the application of remedies to the affected part.

When otorrhea is complicated with perforation of the membrane, and where the pus passes through, penetrating the tympanum and Eustachian tube, to the throat, the best method of detaching the air, is to catheterize the tube with a silver catheter, and blow or inject warm air through it. These injections, when the membrane is perforated, are the best remedies for the acute pains produced by the stagnation of pus in the tympanum, which generally resist all other methods of treatment.

44. Dr. Marc d'Espine,† a continental writer on Aural Surgery, terminates a lengthy communication on the Treatment of Deafness, and in particular on *Catheterism of the Eustachian tube*, with the following summary:

1st. Catheterism, with air, water, solution of potass, and other more caustic

\* Gazette des Hôpit., Nov. 5, 1846.

† Archives Gen., Juin 1846, p. 145.

liquids, or by a punch (*mandrin dilateur*), introduced into the tube, is capable of curing deafness in a longer or shorter period, when it results from obliteration either of the middle ear or of the Eustachian tube.

2d. Failure, after the continued use of these measures, should induce us to try the effect of a slight exploratory puncture of the tympanum, to ascertain whether a thickening of this membrane is not the cause of the deafness.

3d. If, after that, the deafness persists without amelioration, there remains but two suppositions, it is either caused by an affection of the labyrinth, or of the petrous bone, when nothing can be done; or the branches of the auditory nerve have become obtuse or paralysed. in which case we may endeavour to excite sensibility by introducing into the ear by catheterism, either liquids which stimulate the nervous system, or spasmodics, as *nux vomica*, camphor, amber, and valerian; or mechanical stimulants, and in particular the electric current.

4. Where the history or the symptoms bring into view some other affection, whether it be cerebral or more distant from the ear, or general, of which the deafness is but symptomatic, we must direct our measures against the cause of the deafness, however far removed.

44. On the subject of *Puncturing the Membrum Tympani*, it is most important to lay before our readers a paper by Dr. Butcher, not very long since read to the Surgical Society of Ireland,\* in which he related two well-marked examples of loss of life following this operation.

The first was a case of a young woman who was deaf in both ears for four years. Prior to this period she got a severe cold, with swelling of the glands round the neck. She could not distinguish between the loudest noises. Catheterism of the Eustachian tube was performed and said to fail. Hence it was agreed upon that the membrane of the tympanum should be pierced, a small piece being drilled out of the membrane of the right side. Immediately after the operation the hearing was greatly improved. Next day intense pain was experienced in the ear. Suitable remedies were applied, and in forty-eight hours a profuse discharge took place. This varied much in quantity, day after day, for two months, all the time the hearing being slightly benefitted. In eleven weeks after the operation, the patient became more deaf than ever, and was constantly complaining of flying pains through the head, at one time fixing in the forehead for a few hours, at another in the occiput, and frequently in the temple, particularly in the right ear, at times not exceeding a dull heavy weight, but at others aggravated to the greatest torture. In this state she continued, one day better, another worse, for four months, when she was attacked with rigors, rapid pulse, intolerance of light, and all the symptoms of disease of the brain, after which she died on the third day.

An abscess was found in the lower part of the middle lobe of the brain. No opening could be detected through the petrous portion of the temporal bone, but the dura mater covering it was roughened on the surface, and softened in its texture, particularly near the internal auditory foramen. The *membrum tympani* was destroyed, and the lining membrane of the tympanum considerably thickened and villous on its surface.

The following case is far more interesting; it is that of a man *æt.* 20. He complained of deafness in the right ear twelve months prior to his death. Having applied to a surgeon he had his tympanum pierced. At first his hearing was slightly improved, but in three weeks it relapsed as bad as before; and from this period he had, superadded, periodic attacks of headache, loud noises being particularly troublesome to him; a dull, heavy pain in the affected ear was at some periods most excruciating; ultimately general indisposition, restless nights, loss of appetite, periodic headaches, together with an unaccountable lassitude, marked his history up to a fortnight previous to his death, when he was seized with rigors and fever. The following were the appearances which presented themselves. The pia mater was exceedingly vascular. Six ounces of straw-coloured fluid was contained in the ventricles; softening of the septum lucidum, the thin and thread-like bands of the white structure floating in the fluid; the dura mater and pia mater towards the middle fossa of the right side of the base of the skull far

\* Dublin Med. Press, April 1, 1846.



more vascular than elsewhere, and a streaking of purulent matter of healthy character was found communicating with an abscess about the size of a small walnut, in the interior part of the right lobe of the cerebellum. The dura mater covering the upper and under surface of the petrous portion, was much thickened and roughened on its surface. A small tumour, about the size of a bean, lay on the auditory portion of the seventh pair of nerves. The *rationale* of these cases is plain; inflammation attacked the tympanum after the operation, and was transmitted to the brain.

In remarking upon these important cases, Professor Jacob expressed his belief that numerous instances of a similar kind have occurred as the consequence of putting this operation in practice where it need not and should not have been resorted to. The cases recorded by Sir A. Cooper, in which this operation was performed by him, Professor Jacob observed were not many, and though Sir Astley performed the operation frequently, he did it in a very delicate manner, by merely passing the sharp end of a common silver probe in and out of the membrane. Dr. Jacob himself had seen him do this, and Sir Astley used at the same time to state to the students that the improvement produced would be merely temporary. The introduction of the practice had, nevertheless, been the source of considerable celebrity to Sir A. Cooper, who received the Copley medal for his communication published in the "Philosophical Transactions," though before a year had elapsed it was found that the operation was by no means attended with the success that was generally anticipated; and, as before observed, it has been too generally practised by men who grasp at the credit so obtained for the time, regardless of the consequences and the sacrifices made to obtain an unenviable celebrity.

45. Closely allied to the subject before us is that of *Accidental Injury to the Membrum Tympani*.—The extreme pain and general distress produced by violence to this delicate membrane is well understood, and the instinctive avoidance of the membrane in all the necessary operations for clearing the ear of wax, and the like, is founded upon its acute sensibility; but we had not met with any description of the effects produced by an accidental severe injury of the part when the following case by Dr. Cottman, of Whitehaven, met our eye.\*

March 28th, 1846. Mrs. J. on the night of the 26th, while picking her ear with a knitting-needle, accidentally passed it in too far, so as to injure the membrum tympani; the effect was instantaneous; she seized hold of the nearest object to prevent her from falling from the chair, and called for assistance. With some difficulty she was carried to an adjoining room in a state of insensibility; being placed on a bed, she recovered her reason sufficiently in a little while to tell what had happened to her. Her expression was wild, her pupils very much dilated, face flushed, the least motion of the head seemed to give the most excruciating pain; she would scream aloud; tetanic twitching of the muscles of the arm took place; the pulse was strong, full, and bounding, with violent throbbing of the carotids. In the course of fifteen or twenty minutes, this state of things was succeeded by general syncope: her face would become blackened, her extremities were cold, and there was long and laboured respiration, with occasional sighing; this would continue for half an hour or more before she could be aroused; when aroused, her conversation was incoherent, her face flushed, pupils preternaturally dilated, with violent sick stomach; occasional vomiting; rigors; and extremities cold. This state of things continued alternately from 10 o'clock at night until 3 o'clock in the morning, when she fell asleep for three hours.

March 29th.—Still complained of pain in her head; the least motion aggravated it; said that her mind was very much confused, that she could not think; face flushed; pupils dilated; tetanic twitching of the muscles of the extremities; occasional flushes of heat and cold; pulse full, strong, and corded; conversation at times incoherent. Dr. Cottman took about a quart of blood with decided benefit; her pulse became natural, her mind clearer; she talked more rationally; said that her head felt better, that she could hear a little in the injured ear. Up to this time, she had not heard at all in that ear from the time of the accident. She felt so much better that she desired her female attendants to take her dress off; in attempting to do so she was placed in an upright position; this produced syncope which

\* Houston's Med. Examiner, Sept. 1846, p. 521.

continued for nearly an hour; during this time her breathing was stertorous and laboured; her extremities cold; occasional twitching of the muscles of the arm; pulse very slow and feeble; it was with the utmost difficulty that she could be aroused, and when aroused she complained of being very chilly; violent sick stomach and a constant disposition to vomit. In the afternoon, two small blisters were applied behind the ears; these drew well, and produced a general amelioration of all her bad symptoms; she fell into a quiet sleep at night, and slept well until morning.

March 30th.—On awaking in the morning she had considerable fever; was restless; thirst urgent; nausea, with a disposition to vomit. About twelve o'clock the fever passed off, and she said she felt much better; could turn in bed without producing any unpleasant feeling about her head; mind clearer; talked more rationally; expression better; thought she could hear better. In the afternoon she fell asleep, and slept till near night. About nine o'clock p.m. she was decidedly better than she had been; expression natural; talked rationally; said she was entirely free from pain.

March 31st.—Did not sleep well last night; return of fever; restlessness; thirst very urgent; craved ice; complained of a *roaring* in the injured ear like distant thunder; cephalalgia very great, confined to the forehead; fever passed off about ten o'clock, when she fell asleep for about an hour with decided benefit; said she always felt better after sleeping. In the afternoon she had eight grains of blue pill.

April 1st.—Slept well; fever very slight; a general improvement in her situation; slight *roaring* in the injured ear. From this time she gradually convalesced without a return of any unpleasant symptoms.

46. In Miller's "Practical Surgery" we find a section on aural surgery, from which we may furnish our readers with the following extract on *Polypus of the Ear*. Two forms of polypi may form on the lining membrane of the meatus externus; one soft and pulpy, analogous to the common mucous polypus of the nose; the other more firm and fleshy, resembling more the solid polypi of the vagina; both simple in structure and tendency. Deafness is occasioned, along with uncomfortable sensations in the part, and more or less discharge escapes, of a puriform character. The treatment is by evulsion, thin forceps being employed for this purpose, as in the case of nasal polypus. By the use of the speculum auris, cautiously introduced, the site of attachment is ascertained, at which spot the seizure by forceps is made; and by slight torsion, combined with evulsion, extirpation is effected. When bleeding has ceased and pain subsided, it is well to touch the part firmly with nitrate of silver, so as to diminish the chance of reproduction. And if the morbid structure should not have been entirely removed, such slight cauterization may require repetition from time to time. During the healing process, relaxation of the membrane, with copious discharge, is apt to prove troublesome, demanding the daily and repeated use of gently stimulating and astringent injections.

Fungoid granulations, of a polyposus character, not unfrequently spring from the membrane of the meatus, in cases of long-continued otorrhea. They are got rid of by the nitrate of silver, used escharotically, and by the subsequent employment of astringent injections.

47. *A Deficiency of Ceruminous Secretion* is an occasional but much less frequent cause of deafness than an accumulation of this substance in a hardened state. The meatus is found dry and empty, and the membranum tympani is seen clear and glistening. Stimulants are of use in restoring the secretion, as the essential oils, more or less diluted; and their action may be further assisted by stimulant friction around the auricle. Exhaustion of the cavity is said also to have a beneficial effect, by means of a syringe fitted with a soft nozzle, which completely occludes the meatus.

48. *Hemorrhage from the Ear*.—Blood escaping by the ear may proceed from various sources, and have different significations. 1. One of the most prominent symptoms of fracture at the base of the cranium is bleeding from the ear, amenable to no treatment, and usually a most unfavourable omen. 2. Mere laceration of the lining membrane of the meatus may furnish a copious discharge of blood, independent of any injury done to the cranium, or elsewhere. This requires no treatment, not being likely to prove excessive. It may be the result of a blow,

fall, or direct injury done to the part. 3. Passive hemorrhage may take place from this, as from other mucous surfaces; amenable to the ordinary treatment, local and constitutional, required in such cases. 4. The internal carotid arteries may have been opened into by ulceration: the hemorrhage is then constant, copious, and of the arterial character. Pressure may be tried, but is almost certain to fail. The only sure remedy is ligature of the common carotid artery. 5. The lateral sinus, opened by ulceration, may be the source of the bleeding, when the blood will be dark and venous; and in this case, while ligature of the carotid would prove wholly nugatory, moderate pressure has been found completely effectual.

49. *The Treatment of Nervous Affections of the Ear* is one of the most difficult parts of aural surgery. M. Hubert\* has studied with special care the subject of resinous and balsamic fumigations, which he considers well calculated to be of the greatest possible service in various affections.

When the fumigation is to be effected, the medicine to be volatilized is first put into a glass globe, heated by a lamp, the quantity varying according to the activity of the substance, and the effect to be produced. The balsam or resin is soon fused, and the air charged with the medicated particles leaves the vessel impregnated with their odour, and becoming gradually saturated with them. The patient aspires these vapours, either by the mouth or nose, generally from twenty to thirty minutes, and the effects obtained are as follows: a sense of adstriction and itching first manifests in the nasal fossæ and mouth, and when propagated to the throat and larynx, producing a tickling sensation, followed, in some cases, with efforts to cough and hoarseness. Benzoin, myrrh, elemi, and balsam of Canada and Peru, are among the remedies employed, the quantities being progressively increased.†

50. In Deafness arising from atony of the auditory nerves, accompanied by deficiency of cerumen, the following remedy has been proposed:‡ The ears must first be syringed with a solution of soap in warm water, and the liniment applied, morning and night, to the whole surface of the meatus auditorius, by means of a camel's hair pencil. The effect will be augmented by lightly plugging the external orifice with wool. R. Linimenti camphoræ comp. ʒj. fellis bovini inspissati, ʒj. M.

51. M. Bonnafont reported to the Academy of Sciences a case in which complete deafness of a year's duration, resulting from a comminuted fracture of the cranium, was cured by the action of galvanism and gaseous ammoniacal insufflations by the Eustachian tube. The patient was so deaf that he could not hear the sound of a cannon, and for eight months he could only be communicated with by writing.§

52. There is no part of aural surgery the knowledge of which is of more real importance to the practitioner than that of congenital defect of the organ of hearing and deafness, with a view not only to treatment but to prognosis. Several very interesting papers have recently appeared on this part of the subject.

*Malformations of the External Ear, with Absence or Occlusion of the Meatus on both sides.*—In a paper read before the Royal Society of Edinburgh,|| Dr. Allen Thomson remarks that this defect does not appear to cause total deafness, even when attended with considerable departure from the natural form and structure of the cavity of the tympanum. In the instances which Dr. Thomson has seen, the deprivation of the power of hearing was not so great as may frequently occur from other causes of apparently a much slighter nature. This manifestly depends on the circumstance, that the malformations in question are rarely accompanied by any unnatural condition of the essential parts of the labyrinth which are more immediately concerned in the reception of the sonorous impressions. In none of three cases described was the defect of hearing originally to such a degree as to induce dumbness. An example is recorded in which dumbness occurred; but it might reasonably be supposed that the malformation affected the deeper as well as the middle and external parts of the auditory apparatus. The instances are extremely rare, however, in which deaf-dumbness is caused by congenital malformation of

\* Lib. cit.

† Revue Méd., Juin 1846.

‡ London Med. Gaz., May 1846, p. 925.

§ Revue Méd., Mars 1846, p. 447.

|| Month. Journ. of Med. Science, Dec. 1846, p. 420.



any kind; and it is sufficiently well known to all those who have been connected with institutions for the deaf and dumb, that in by far the greater number of instances of deafness, either total or to such a degree as to induce dumbness, the affection has proceeded from diseases in early life; such as scarlet fever, measles, and small-pox; the inflammatory and suppurative process affecting first the cavity of the tympanum, and being, subsequently, communicated to some part of the labyrinth. In some of the instances of deafness from congenital affection of the internal ear, dissection has brought to light various degrees of an abnormal condition of the whole labyrinth, or of some of its parts; such as total absence of, or incomplete, canals or cochlea, closure of the meatus auditorius internus, small size, or absence, of the auditory nerve, &c. Congenital malformation may exist in any one of the three parts of the auditory apparatus, or in two, or in the whole of them at once. The external auricle is sometimes found deformed, while the meatus and tympanum appear natural; or the labyrinth may be deficient, with a perfect auricle, meatus, and tympanum; but in most instances an imperfect condition of the tympanum and meatus is attended with malformation of the auricle—a circumstance which, it will afterwards appear, may proceed from these three portions of the apparatus being developed in the *utero* from the same system of parts. One or both organs may be the seat of malformation of the external ear; and the deeper the parts involved in the abnormal structure, there is the greater probability that both sides will be affected.

There appears to be no good reason for the opinion expressed by Itard, that the existence of the malformation of the ear is to be looked upon as a sign of the non-viability of a child at birth. In so far as this malformation, like others, is a sign of general weakness of the constitution, it may be considered as prejudicial; but it is not in itself a source of any danger; and a sufficient number of persons so affected have arrived at maturity in good health, to disprove the opinion now referred to.

Dr. Thomson then proceeds to describe the case of Professor Miller, of a boy aged 13, who had given the usual signs of hearing, and had begun to speak as early as children usually do, and whose intellects were good, and faculty of hearing by no means very imperfect, but who, with his friends, were most desirous that an attempt should be made, by a surgical operation, to open the natural passage of the ear.

Professor Miller complied with the urgent wish of the lad and his friends, and made an incision in the natural seat of the opening of the meatus upon the right side, on which the auricle and cartilage appeared less imperfect than on the other. He found, however, all the substance exposed by this incision to be dense and imperforate, and nothing perceptible in the slightest degree resembling either a meatus or membranum tympani; and he was satisfied that the operation was futile on account of the wall of bone being complete in the vicinity of the ear. Neither did Professor Miller find that there was any difference in the lad's power of hearing, whether the wound was open or closed, and he, therefore, allowed it to heal up.

A second case is given of a girl, aged 16, presenting a greater degree of this kind of malformation, with a low degree of intelligence; and a third case of a lady, aged 45, who had been operated upon by Sir A. Cooper, in London, and subsequently again in Edinburgh, without any good result.

Experience, in all the cases now mentioned, is decidedly opposed to the propriety of attempting to cure them by surgical operation. All that is known from dissection of other cases, proving the entire absence of the meatus, would lead to the conclusion that no benefit is to be expected from this mode of treatment; and Dr. Thomson feels persuaded that it should not be resorted to, unless there are good grounds for believing the meatus to be present, and its closure to be caused by malformation of the integumental part, or of the auricle alone.

In the case of a boy, who heard better with one ear than the other, where the internal ears were quite deformed, and the meatus completely closed, but which Dr. Dewar believed to be susceptible of improvement by operation, Dr. Dewar removed a portion of the integument from the natural situation of the meatus, and uncovered "a structure which bore some resemblance to the drum of the ear." The hearing was now manifestly improved; the boy started, and seemed alarmed

at sounds which previously had passed unnoticed by him; but the growth of granulations, and more especially the tendency which the edges of the divided skin had to approach each other, rendered the operation of no permanent avail. Dr. Dewar destroyed these granulations with caustics, actual and potential: but no method, he states, occurred to him at the time of effectually repressing the tendency to reunion; and the patient was afterwards lost sight of.

Dr. Thomson knows only of two dissections of the deeper parts in similar cases. One of these is described by Professor Jaeger, of Erlangen; the other, which has not, so far as he is aware, been described, is preserved in the anatomical museum of the University of Edinburgh. In both of these examples the malformations affected one side only, and there was a remarkable similarity in the condition of the temporal bone. In both, the labyrinth appears to have been quite naturally formed: the cavity of the tympanum and the bony Eustachian canal existed, but were much smaller than usual; the chain of ossiculi differed materially from the natural structure, being united, in one of the examples, into one straight and simple piece, and, consequently, assuming very much the form and appearance of the columella of birds or reptiles. The most striking departure from the normal form of the bone consisted in the entire obliteration of the meatus externus, which seems to have been connected with the absence of that portion of the temporal bone which forms the tympanic ring and lower side of the bony canal of the meatus, and the extension backwards of the articular or true glenoid portion of the temporal bone to twice its natural breadth. There was a total deficiency, therefore, of what may be termed the tympanic bone, or of that which forms the posterior non-articular part of the glenoid cavity of the temporal bone, intervening between the fissure of Glaser and the vaginal ridge of the styloid process. Were this part of the bone merely deficient, the cavity of the tympanum would be left freely open below; but in the two bones now referred to, it seems to have been closed by the unusual extension of the glenoid or articular portion of the bone backwards.

Mr. Crosse, of Norwich, has published a "*Dissection of the Ears of a Dumb and Deaf Person.*"—In the right ear the meatus externus was full of cerumen of a dark brown colour. The membrum tympani was of a dull white, and somewhat thicker than natural. The epithelium covering its external surface was denser than usual, and its internal mucous larger, thick and soft. The cavities of the tympanum and mastoid cells were completely filled with a secretion of a leaden-white colour; thick, and in some parts rather viscid. On microscopic examination it was found to consist chiefly of pus-globules pervaded with granules, characteristic of serofulous matter. The mucous membrane of the tympanic cavity was much thicker than natural; very soft, and contained large tortuous vessels full of dark-coloured blood. The ossicles were quite enveloped, and in a great measure concealed from view by this thick membrane. The only part of the stapes discernible was the point where it joins with the incus. The Eustachian tube was healthy; the auditory nerve and cochlea quite healthy, the fluid in the vestibule and semicircular canals transparent; but the membranous labyrinth was rather thicker than natural, and under the microscope it was seen to contain numerous blood-vessels; the superior semicircular canal was incomplete at its posterior half, and the posterior canal almost wholly absent. The left ear was in a similar state to the right, excepting that the external meatus was slightly contracted, and the layer of bone separating it from the mastoid cells partially absorbed at the posterior surface of its internal extremity for a space of five or six lines in circumference. The membrane covering this portion of bone was thick and vascular, and its blood-vessels directly communicated with those of the mucous membrane of the mastoid cells.\*

Mr. Crosse has observed an absorption of the layer of bone between the external meatus and mastoid cells in other instances, and in one dissection the cerumen was found projecting from the cavity of the meatus into the mastoid cells. It is not improbable that the absorption of the bone is caused by constant pressure of hardened cerumen. The superior semicircular canal was almost wholly wanting.

\* Med. Times, March 13, 1847.

Mr. Crosse considers there can be no doubt that the cause of deafness in the patient from whom the ears were taken was the deficiency of the semicircular canals, but it is interesting to notice the thickened condition of the mucous membrane of the tympanic cavity, and the presence of the purulent matter. From the dissections made by Mr. Crosse, during the last seven or eight years, which amount at the present time to 911, he states, that it is quite apparent the most frequent cause of deafness is a morbid condition of the tympanic mucous membrane; thus confirming Mr. Toynbee's experience before described. In some instances, as stated by Mr. Toynbee, there are bands connecting various parts of the tympanic cavity together, and preventing the natural motions of the ossicula and membranum tympani; in others the cavity is nearly filled by the thickened membrane, and very often there are large quantities of thick viscid matter, which there is every reason to believe may remain for many years, if not affected by medicinal agents. A great many cases of this kind originated in scrofulous inflammation. It is also interesting to remark how rarely the Eustachian tube is affected. Mr. Crosse hopes, ere long, to lay before the medical profession the results of some of his later investigations into the nature and treatment of diseases of the ear.\*

The "*Gazette des Hôpitaux*"† contains a curious case of congenital imperforation of the two auditory canals, by Mr. Bonnafont. The child was ten years old. Both auricles were greatly deformed; no trace of the auditory canal could be perceived; but on pressing forcibly with the end of the finger, a slight depression was felt, which might be its origin. M. Bonnafont considered that if the obliteration depended upon occlusion of the soft parts, an operation might be useful; but if on the bony canal, it would be useless. Supposing an operation possible, it would become necessary to ascertain the state of the acoustic nerve. To determine this, when there is no perception of sounds by the natural way, is difficult. M. Bonnafont applied a tuning hammer (diapason) to the different parts of the skull for this purpose, a plan which succeeded perfectly: the child made an effort to cry whenever the branches of the instrument were brought into contact with the head in a state of vibration, while she remained perfectly quiet when the instrument was applied in a state of repose. By means of a needle the obstructing material was ascertained to be fleshy. It was not deemed right to defer the operation, since the parts would only become more dense, and time would be lost for the development of the mental powers, besides which the auditory nerve remaining long inactive, might lose altogether its sensibility to the impression of sounds.

In Dr. Miller's case, already referred to, the patient heard ordinary conversation, if distinct and rather loud; he had gone to school at the same age as other boys, and had made equal proficiency in the ordinary branches of education, although no unusual means of teaching had ever been applied to him; he had assisted his father in the occupation of a butcher, with much smartness and intelligence. A series of experiments, conducted by Professors Forbes and Thomson, seemed to show that he heard mainly by conduction of sound through the bones of the cranium to the internal ears, very perfectly constructed.

This section on Aural Surgery, embracing Cases, Observations, and Dissections, with remarks condensed from some more elaborate essays, scattered through many thousand pages of periodical literature, cannot fail to convince our readers, on the one hand, of the importance of the subject of aural surgery to the practitioner, and on the other, of the real utility of our Half-Yearly Abstract and our Reports, by which we endeavour to make the reader, with much saving of labour to himself, acquainted with the present and the progressive state of every department of medical and surgical practice.

\* \* \* Our next Volume will embrace a Report on Ophthalmic Surgery.

\* The Prov. Med. and Surg. Journal.

† Dec. 12, 1846.



### III.

## REPORT ON THE PROGRESS OF MIDWIFERY, AND THE DISEASES OF WOMEN AND CHILDREN.

BY THE EDITOR.

THE most prominent fact connected with the progress of obstetrical science which has transpired subsequent to the date of our last Report, is undoubtedly that of the application of Ether Inhalation, for the purpose of obviating the pains of natural as well as abnormal labour. It is not, however, our intention to dilate upon this most interesting and important subject in the present place, but we shall reserve what we have to offer respecting it for the Report on the General Effects of Ether, which will be found in a future part of this volume. We merely here chronicle the fact as one of the most remarkable events which have ever befallen the study and practice of Midwifery.

Among the works which have issued from the press in this department, or have reached this country within the period embraced in this Report, we may mention one by Negrier, entitled "*Recherches sur les Fonctions du Col de l'Utérus*," the object of which is to elucidate the mechanism and treatment of placenta prævia; and one by Jacquemier, called "*Manuel d'Accouchemens, et des Maladies des Femmes grosses et accouchées*," &c. A second edition of Dr. Ashwell's well-known and highly esteemed work; and, lastly, a most important and talented exposition of tumours of the uterus by Mr. Safford Lee, have also appeared. Of this latter work, we shall give a more detailed account, premising that we regard it as one of the best works of its class which we have hitherto encountered. Dr. King has also published a small volume upon the causes of mortality of still-born children, which we shall also notice at a future page.

#### § I. *Diseases of Women unconnected with Pregnancy.*

Under this section, we have no great variety of subjects to mention on the present occasion, but some of those which will be alluded to are of surpassing interest, as, for instance, that of ovarian tumour.

1. *Amenorrhœa*.—Dr. Camps has recorded a singular instance of a female reaching the age of 45 without ever having menstruated, or having been in the least degree incommoded by the absence of this important function. Dr. Camps considers the case unique, and so it undoubtedly is in some respects, for although occasional instances have been recorded of non menstruation, the anomaly has been associated with malformation of the internal genital organs, and an organization approaching that of the male. Dr. Camps' patient, on the contrary, was in every respect naturally formed, and her appearance was perfectly feminine.\*

2. *Dysmenorrhœa, Incision of the Cervix m.*—In addition to the practical essay by Dr. Oldham, which forms one of our extracts (art. 90), we have to mention, that Dr. Simpson has quite recently spoken in high terms of commendation of division of the os uteri as a remedy for obstructive dysmenorrhœa. The instrument which he makes use of is a kind of *lithotome caché*. The end of the instrument is passed up into the cervix and within the os internum. It is then slightly opened laterally, first on one side and then on the other, so as to divide any fibres which may cause constriction. Care must be taken not to pass beyond the substance of the cervix,

\* Med. Gazette, March, 1847.

as it is closely surrounded by a plexus of veins, which, if wounded, would give rise to serious hemorrhage.\*

3. *Uterine Injections.*—The injection of astringent lotions into the cavity of the uterus, so much resorted to in uterine leucorrhœa by French surgeons, is forcibly objected to by Dr. Oldham, as attended with very considerable risk. In proof of his assertion, he reports two cases: in one the injection of warm water alone was followed by severe pain with inflammatory symptoms, requiring bleeding and antiphlogistic treatment; in the second, serious abdominal symptoms followed the injection of nitrate of silver into the vagina, the os uteri being unusually patulous. The source of the danger is not supposed to be that of injury inflicted upon the uterine lining membrane, but the ready and immediate transit of any fluid through the Fallopian tubes into the peritoneal sac. That this transmission does easily take place may be proved by experiment upon the dead body.†

The injection of various fluids into the uterus for the suspension of hemorrhage after labour, will be mentioned elsewhere.

4. *Ulceration of the Lining Membrane of the Uterus.*—At a meeting of the Pathological Society of London, Dr. Ramsbotham exhibited the preparation of an instance of the above disease, which he considered so rare as to be only the fourth case on record. The disease seems to consist in ulceration of the lining membrane of the uterus, under which the parietes of the organ become softened in structure, much as they do in pregnancy, and generally irregularly thinned in substance, while the cavity is considerably dilated, and contains coagula, unhealthy, fetid pus, and portions of shreddy fibrin, which adhere with greater or less tenacity to the internal surface. In the specimen exhibited, the cavity would hold a large orange, and although the principal part of the lining membrane of the uterus was destroyed by the ulcerative process, very little of the fibrous substance was eaten away, and the parietes had consequently lost much of their original thickness.

This disease (Dr. Ramsbotham observed) is interesting in three points of view—first, on account of its rarity; secondly, because in three out of the four cases it was mistaken for pregnancy; (in Dr. Clarke's case, indeed, the woman was 65 years old, and therefore pregnancy was out of the question; while in his father's case the symptoms so closely resembled those of pregnancy, than an attempt to induce premature labour was made at the suggestion of Dr. Gooch;) and, thirdly, from its fatal tendency. It is unlike the more ordinary cases (although they are also very rare) that have been reported under the term *hydrometra*, such as that given by Dr. A. T. Thompson, in the thirteenth volume of the "*Medico-Chirurgical Transactions*," as well as others noticed by Boivin and Dugès, because in them the internal surface of the uterus had undergone no perceptible morbid change, and because the os uteri was obliterated by adhesion; in Dr. Thompson's so perfectly, that although its situation could be traced from the vagina, yet, internally, it was no more perceptible than if it had never existed. In the case under consideration, on the contrary, the os uteri was pervious, though in Mr. Coley's, indeed, it was plugged by a tough mucus, resembling that secreted in pregnancy.

A case, which was probably of the nature of the above, has also recently occurred in the practice of Mr. Rose, of Swaffham, but as a post-mortem examination was not obtained, its exact character could not be ascertained. The symptoms were chiefly—great prostration and emaciation, with copious and highly fetid discharge; the interior of the uterus felt rough to the touch.‡

5. *Uterine Tumour.*—The subject of uterine tumours *in extenso* forms the first part of the work by Mr. Safford Lee, above alluded to, and is there considered under the five divisions of fibrous tumours of the uterus, polypoid tumours, soft polypi, cauliflower excrescence, and soft polypi. We here give a brief analysis of the subject:—

*Fibrous tumours.*—These tumours are classified accordingly as they are placed immediately under the serous covering of the uterus: on its muscular structure, or directly beneath the internal primary membrane. The physical appearance of these tumours, as given by Mr. Lee, need not be transcribed; suffice it to say, that his description is both minute and accurate.

\* Monthly Journal, May, 1847.

† Med. Gazette, Dec. 25, 1846.

‡ Lancet, Feb. 20, 1847.

The symptoms referable to fibrous tumours differ according to their situation. When attached to the outer surface of the womb, they can be felt through the abdominal parietes, and if pedunculated, can be moved about in the peritoneal cavity with a freedom proportioned to the length of the pedicle. When they are located on the posterior or lateral parts of the womb, a train of distressing symptoms arises, which depend upon the pressure exercised upon the pelvic nerves and neighbouring organs.

The symptoms of interstitial tumour are stated to be more obscure, and the disease is only known by its increase in bulk. In conducting the diagnostic examination of fibrous tumour, the author advises minute attention to the state of the os and cervix, the weight of the organ and its mobility, and the fact of its connection with any tumour previously felt above the pubis. He fully appreciates the value of Dr. Simpson's uterine sound, as a means of ascertaining the attachment or non-attachment of the womb to the neighbouring parts.

The affections which are most frequently confounded with fibrous tumours are—1st, Inflammatory induration of the uterus; 2d, pregnancy; 3d, ovarian tumour; 4th, other forms of abdominal tumour. The differential diagnosis is thus laid down:

Inflammatory induration produces symptoms so identical in every respect with those of fibrous tumour at its commencement, that their diagnosis is extremely difficult. Mr. Lee regards the effect of treatment as affording the best insight into the nature of the tumour, but also lays some stress upon the fact that more or less fever is present before the tumour can be felt in inflammatory induration; while, on the other hand, true fibrous tumour is not accompanied by febrile symptoms, and is not painful on pressure.

The means of diagnosing pregnancy do not require particular mention; but we may notice that the author has paid particular attention to the state of the breasts in fibrous tumour, and states that although enlargement of the breast and darkening of the areola are generally present, yet that he has never seen any moisture or œdema of the nipple, as is the case in pregnancy.

The differential diagnosis of ovarian dropsy, abdominal tumour, and fibrous tumour of the uterus are next alluded to, Dr. Simpson's uterine sound being chiefly relied upon. The author here cautions the practitioner that the indiscriminate use of this instrument has been occasionally known to induce abortion; and that in two cases he has seen peritonitis ensue from its careful introduction into a uterus containing fibrous tumour.

For the author's treatment of uterine tumours we refer the reader to art. 100.

The pathology, diagnosis, and some other subjects connected with the history of polypoid tumours of the uterus are considered in the second chapter; but we do not find in this portion of the work much to arrest our attention. The reader may, however, advantageously consult the sections which treat of the mode by which these tumours detach themselves from the uterine walls, and on the source of the hemorrhage which forms one of their prominent symptoms. On this point the author agrees with Dr. Oldham, that the principal source of the bleeding is not from the morbid growth itself, but from a vascular investment of uterine tissue.

The above-mentioned polypi are of the same nature as the fibrous tumour of the uterus, and are, in fact, nothing more than either interstitial or submucous fibrous tumours, which have descended into and at length out of the uterine cavity; but there are other forms of polypoid tumours of a softer texture, to which the author devotes a separate chapter.

Soft polypi are met with under six varieties, which the author designates as follows: 1st. Vesicular polypi. 2d. Polypi from enlargement of the Nabothian glands. 3. Fibro-cellular polypi. 4. Cebulo-vascular polypi. 5. Mucous polypi. 6. The channelled polypus of the cervix. The symptoms of these polypi are, for the most part, the same as those of the harder varieties; but the author remarks that the mucous discharges are greater, and the expulsive pains less than in the latter; and hemorrhage is a more constant attendant upon them. In this case the tumour itself furnishes a large part of the blood, as well as the uterine tissue which forms its base.

In this chapter we have an excellent account of the methods of treatment of polypi usually recognized. In reference to the comparative merits of excision



and ligature, the author is at variance with Dr. Montgomery and others, in the opinion that excision is the preferable operation, and is not attended with that risk which it is commonly supposed to be. He has been at some pains to inquire into the grounds for the fear generally entertained, and finds that there are at most only two cases on record in which death has been distinctly referable to the hemorrhage following excision, and these he justly refuses to admit as valid evidence of the inferiority of the operation to that of the ligature.

6. *Cauliflower Excrescence*.—Mr. Lee's chapter on this peculiar morbid growth will be found to be very complete, and is based upon the results of personal examination, with the aid of the microscope. He finds the tissue to be composed of nucleated cells of large size, some oval and others elongated; these contained a quantity of granular matter, and a well-defined nucleus, which, in its turn, appeared to be filled with granular matter. The cells were connected by cellular filaments. To this description he adds those of Drs. Anderson and Simpson, which are, in the main, in accordance with it.\*

In reference to malignant origin of cauliflower excrescence, Mr. Lee decides that it is not carcinomatous. No very definite system of treatment is laid down; but the author prefers excision to ligature, and recommends cauterization of the cut surface.

7. *Encephaloid Polypi*.—The author does not enter upon the subject of malignant disease of the womb in general, but limits himself to the consideration of those cases in which the malignant structure becomes polypoid. This chapter does not call for any particular remark.

8. *Ovarian Tumour*.—The past half-year has been more than usually fertile in communications upon the subject of ovarian dropsy, and on the operation of excision as a means of cure. The most comprehensive, and at the same time, we believe, the most trustworthy notice of the disease, is to be found in Mr. Lee's volume above alluded to. Of this we shall proceed to give an abstract.

A perusal of the documentary evidence of the history, and more especially of the treatment, of encysted dropsy of the ovary, convinced Mr. Lee that many statements had been promulgated which he could not recognize in actual practice; and he, therefore, determined to collect and analyze a sufficient number of cases himself, to enable him to arrive at a satisfactory conclusion on the various points connected with the pathology of the disease. Some of these conclusions, as we shall presently see, are at variance with commonly received opinions.

It has been said, for instance, that ovarian disease attacks females indiscriminately, whether married or single. Mr. Lee, however, finds that the married are the more liable to it. Of 136 cases, 99 had been married, and 37 only were single.

Mr. Lee also shows that the prevailing notion, that the disease attacks women in the decline of life, is erroneous, and that the age at which it is most rife is between 20 and 40.

The duration of the disease is also seen, by Mr. Lee's tables, to be far more limited than is commonly supposed; for, out of 131 cases, the disease lasted only one year in 38; two years in 25; 17 patients survived three years; 10, four years; 3, five years; 5, six years; 4, seven years; 3, eight years; 5, sixteen years; 1, twenty years; 1, twenty-two years; 2, twenty-five years; and 1, thirty years.

An inquiry into the *causes* of ovarian disease leads Mr. Lee to the conclusion that the most frequent cause is referable to the effects of labour; that the sudden suppression of the menses is next in frequency; and the excitement of the sexual act is a third. Among the unmarried he regards the ungratified sexual instinct as the most potent cause.

In considering the pathological anatomy of ovarian disease, Mr. Lee divides his remarks into three classes—1. those which are referable to the different structures which enter into the formation of cystic tumours of the abdomen; 2. those which relate to the contents of the cysts; and, 3. to the effects produced by them on the various abdominal organs. Under the first division he gives a description of the simple cyst attached to the ovary or broad ligaments of the uterus; of enlargement of the Graafian vesicles; of cysts unconnected with the ovary; and,

lastly, of the multilocular cyst. The second division contains a good account of the substances, both fluid and solid, commonly found in the ovarian cysts. The third includes the symptomatology of the disease, followed by remarks on diagnosis and treatment. These subjects we shall notice more at length, as bearing directly upon practice.

9. *Symptoms of Ovarian Dropsy.*—Mr. Lee refers the symptoms of ovarian dropsy to two distinct periods: the first embracing the time during which the tumour remains in the pelvis; the second, that at which it emerges from that cavity.

The patient first complains of deep-seated pain in one or both groins, with sense of weight and bearing-down in the pelvis; a throbbing pain is also generally felt at the fundament, with pain on defecation, and a *burning* sensation in the hip of the affected side. Constipation, piles, varicose veins, and œdema of the limbs are also occasional symptoms.

Examination per vaginam shows the uterus to be healthy; but pressure on the posterior and upper part of the vagina gives pain. At this time also symptoms occasionally arise which might lead to the suspicion of pregnancy.

When the tumour emerges into the abdomen, some of these symptoms subside, and are replaced by others. The bladder becomes somewhat displaced, and its full distension is prevented by the size of the tumour; in consequence of which frequent desire to pass water ensues. When the tumour first occupies the abdomen a general tympanitic state frequently obscures the signs of its presence; and œdema of the limb is a more constant symptom.

External examination will now detect the tumour, and fluctuation, more or less distinct, becomes perceptible. Mr. Lee gives the following directions for testing the presence of solid matter in any portion of the cyst. The hand is to be placed on one side of the tumour, and the force of the fluctuation, induced by tapping the other side, is to be noticed. The operation is then to be reversed, and if the fluctuation is equally distinct, it may be surmised that no solid matter exists. If the fluctuation varies in distinctness, the presumption is in favour of its presence.

The signs derived from percussion may be mentioned under the head of diagnosis. Mr. Lee mentions a crepitating sensation felt on the surface of the abdomen as diagnostic of the existence of adhesions. This physical sign was first pointed out by Dr. Bright, and is one which, if it should prove to be constant, will be of immense importance in reference to the operation of excision: the knowledge of the previous existence of this sign would at once negative the propriety of that formidable proceeding.

10. *Diagnosis of Ovarian Tumours.*—The difficulty which attends the diagnosis of this disease is, as Mr. Lee well observes, evidenced by the fact that in six of the patients on whom gastrotomy has been performed for the cure of this disease, no tumour has been found.

While the tumour is still in the pelvis, it may be confounded with two diseases, *retroversion* and *retroflexion* of the womb. Mr. Lee thus draws the distinction between them:

“When we examine, per vaginam, a patient labouring under the first stage of ovarian dropsy, we find a circumscribed tumour at the posterior portion of the vagina, painful on pressure, and resembling in figure the fundus of the uterus. But the examination of the uterus will decide the question; the os uteri will be found in its proper position, looking backwards; the body of the uterus forward, and moveable with the uterine sound. In retroversion the os uteri is forcibly thrown forwards and upwards; the womb is fixed and painful.”

Retroflexion of the womb is still more likely to be confounded with ovarian dropsy. The uterine sound affords a ready and certain means of diagnosis.

When an ovarian tumour occupies the general abdominal cavity, it is still likely to be mistaken for other affections. Of these, the principal, as stated by Mr. Lee, are—

“1st. *Ascites*. The two are thus distinguished. In ovarian dropsy the patient has generally the enjoyment of good general health; the abdomen is tense; the bulging is more to one side; no borborygmi are heard; percussion elicits a *dull* sound in front, a clear sound in the lumbar regions. The tumour is sometimes smooth: at others irregular. Fluctuation is often obscure, and not observed in the

lumbar regions. The vagina is elongated, and the os uteri is tilted to the side on which the disease is.

"In ascites, the aspect is generally that of ill health. The abdomen is not usually tense; and the greatest prominence varies with the posture. When the patient is supine, percussion elicits a clear sound in front, a dull one in the lumbar regions.

"2d. *Pregnancy.* Ovarian dropsy may be accompanied by many signs of pregnancy, but may be distinguished by the disease commencing on one side; by the regularity of the menstrual discharge; by the absence of the œdematous state of the areola and enlarged follicles before mentioned; and by examination, which detects the uterus to be small and movable, with the os and cervix natural. The two states may, however, be conjoined, when the diagnosis will of course be complicated."

Mr. Lee mentions other affections for which ovarian dropsy may be mistaken; but of these the diagnosis is so simple that we cannot suppose an error as a very probable occurrence. Such are hard tumours of the uterus itself, distended bladder, tympanites, &c.

We now come to the most important of Mr. Lee's essay, and one which he has handled with singular ability, viz. the treatment of ovarian tumour. Of the medicinal treatment but little that is satisfactory can be asserted. Iodine and liquor potassæ have succeeded in a few instances, but failed in many more. Mr. Brown's plan of treatment (see Abstract, vol. iii. p. 211), by tapping, pressure, and mercurials, is alluded to; but the author does not appear to put much faith in it. It may be stated here that Mr. Brown has quite recently communicated the fact, that he has himself abandoned the mercurial portion of the treatment, and that Dr. Locock considers it worse than useless.\*

11. *The Surgical Treatment of Ovarian Tumour: Tapping.*—Mr. Lee's remarks on the operation of tapping, as a palliative in ovarian dropsy, are very unfavourable to its performance, and have excited no little discussion at various times since the publication of his book. He states that inflammation of the cyst or of the peritoneum is the almost inevitable termination, some time or other, of the lives of those who submit to the operation; and moreover, that, as far as his tables may be confided in, of those who die immediately from its effects, more than half sank within four months, and of those half were only tapped once. The danger of tapping, thus exhibited by Mr. Lee, is confirmed by the experience of Mr. Phillips, Mr. Southam, and Dr. Murphy; but is thought, on the other hand, by Dr. Locock, to be greatly exaggerated.† Mr. Lee's tables referring to this point are well worthy of study. (See pp. 176, 7, 8, and 9.)

12. *Excision of the Cyst.*—We have in our former volumes given so complete a review of the statistical evidence upon which the claims of this operation rest, that it would be a useless repetition to follow Mr. Lee through this portion of his work, which, for the most part, consists of the accumulation of the same facts which we have previously noticed. We, however, cannot, in justice to Mr. Lee, omit to state that he has exhibited both a rare amount of analytical acumen in the manner in which he has arranged his facts, and a just discrimination in the conclusions to which he has arrived. These conclusions, as far as they relate to the operation, are as follows:

"1st. That from the difficulty arising in the cure of this disease, the operation of extraction of the cyst has been proposed and performed 114 times, of which number 74 have recovered and 40 died, making the average mortality one in three nearly.

"2d. That of these 114 operations, in 24, or rather less than one in five, the operation was obliged to be abandoned, either from extent of adhesions, from the tumour being a uterine or omental one, or from there being no tumour at all, proving indisputably the *difficulties of the diagnosis.*

"3d. That in the 90 cases where the tumour was removed, nearly one died to three recoveries.

"4th. That the diagnosis of ovarian tumours is very obscure as regards adhesions and the character of the tumour; thus adhesions existed in 46 of the 81 cases where the fact is mentioned.

\* Lancet, May 8, 1847.

† See Report of Meeting of the Med. Chirurg. Soc., March 23.



"5th. That where adhesions existed, the mortality was greater, being 1 death in 24.

"6th. That the principal recorded causes of death, where it took place soon after the operation, are hemorrhage and peritonitis.

"7th. When death takes place in consequence of the operation it is very rapid. Of 30 patients, 14 died within thirty-six hours, and 25 within a week.

"8th. That the character of the disease is of importance with regard to its mortality. In the case of hard tumours the mortality was more than 1 in 2. Of the 16, 9 were cured, 7 died. In 5 the tumour was not removed. When the tumour was composed partly of fluid and partly of solid matter, viz. in 65 cases, 44 were cured, 21 died, and in 14 the tumour was not extracted, making the mortality less than 1 in 3. So that encysted dropsy is more favourable for the operation than hard tumours of the organ.

"9th. That as regards the mortality of the two operations, in 85 cases where the major operation was performed, 50 were cured and 35 died, making the mortality 1 to 2½; in 23 where the minor operation was performed, 19 were cured, and 4 died, making a mortality of 1 in 6.

"10th. That in one of the cases operated upon the tumour was malignant, but that encysted dropsy is not malignant in the ordinary sense of the word."

With the above data before us it is hardly possible to differ from Mr. Lee in the opinion expressed by him, that the operation is unjustifiable when the diagnosis is not clearly ascertained, and when there is evidence of the existence of adhesions. What the cases are in which it is justifiable would be to us a difficult question to solve. Mr. Lee considers that it is so when an encysted tumour has enlarged to "such an extent as to demand active interference, or when a unilocular cyst, which has been under treatment for some time, is becoming multilocular, by the addition of secondary and tertiary cysts upon its inner surface," provided the patient's health be good, and that there are no adhesions.

This concludes our abstract of Mr. Lee's opinions upon the subject of encysted ovarian tumour. We shall proceed in the next place to mention several communications upon the same subject which have appeared in the journals of the last six months.

The general merits of the operation of excision of the ovarium, and the comparative results of the long and short incision, form the subjects of a clinical lecture by Mr. Cæsar Hawkins. This gentleman commences by expressing his conviction that encysted ovarian tumours are by no means the comparatively innocent tumours which they are by many considered to be, and that while, therefore, all possible means of remedying the disease are worthy of attention, yet, on the other hand, an operation like that of excision should not be lightly undertaken. The lecturer next alludes to the statistics of the operation in confirmation of this opinion, and makes particular mention of the facts accumulated by Mr. Phillips, and still more recently by Mr. Lee, and published in the work above noticed. For the evidence afforded by the former gentleman, the reader is referred to our first volume, p. 226, where his paper is noticed.

In contrasting the results of the long and short incision, the lecturer again refers to Mr. Lee's tables in proof of the superior safety of the minor operation, and likewise adduces the case upon which the lecture is founded as an instance in point. This case, which is described at length, is chiefly remarkable in being more than usually favourable for the operation, the presumption being that the cyst was unilocular, there having been no history of inflammatory attacks which would have rendered the existence of adhesions probable, and the patient, moreover, being young and in good health. The description of the operation, which is minutely recorded, does not require particular mention, but its details are interspersed with practical remarks, especially worthy of attention to those who choose to resort to these hazardous operations.

The subsequent treatment of the case in question was extremely judicious, and to this the fortunate issue is, doubtless, greatly to be attributed. As a part of it, the lecturer especially enjoins the exhibition of a narcotic immediately after the operation, and the strictest abstinence, cold water in small quantities being all that he recommends for some considerable period of time.\*

\* *Med. Gazette*, Oct. 30, 1847.

In connexion with the above extracts on the subject of the surgical treatment of ovarian dropsy, we shall now lay before our readers the opinions of Canstatt, which we extract from a review of his "*Specielle Pathologie*" which appeared in the "*Lancet*," Nov. 28, 1846. This writer considers the various operative measures in succession. Of paracentesis he observes:

"Paracentesis, extirpation of the diseased ovary "*en masse*," or extraction of the evacuated sac through a narrow opening, are all exceptionable as remedial measures. Even paracentesis, the least objectionable, is unsafe as an operation, and doubtful as a palliative. It can only be of service when the tumour is monocystic (*einkammerig*), or when several cysts presenting anteriorly are punctured by the trochar. If, however, it should consist of many small non-communicating cysts, the object of the operation—*viz.*, the reduction in size of the tumour—will be frustrated. The same disappointment will occur if the contained fluid be thick and gelatinous. The operation itself is not without danger. Ill-conditioned inflammation and suppuration sometimes ensue; in some cases the vessels punctured during the operation have bled the unfortunate patient to death, or so weakened her that the progress of the organic lesion was materially hastened. Violent inflammation of the cyst may occur, or peritonitis, from escape of some portion of its contents into the peritoneal cavity. Folds of the intestine lying in front of the tumour have been punctured, and when adherent, as they sometimes are, they may be mistaken, by a careless operator, for distended superficial veins. With all these attendant dangers, the operation very often fails to relieve the patient of the accumulation of fluid. It cannot be denied, on the other hand, that paracentesis frequently gives great relief in this class of cases. It must always be considered as a measure sometimes to be resorted to. Generally, indeed, the fluid again rapidly collects, and apparently the more frequently we resort to the operation the more rapid is the reaccumulation. We may therefore conclude, that it should only be performed when, from the great pressure of the contents of the sac on other organs, and the general effect on the whole system, more danger may reasonably be apprehended than from the operation itself or its sequelæ."

Extirpation is regarded by our author, as we have before remarked, in a still more unfavourable light:

"Extirpation is a still more doubtful operation. Frequently, after opening the abdomen, the adhesions between the ovary and other organs render it totally impossible. As is well known, it may be performed in two ways, either by opening the abdomen by a long section, somewhat as in the Cæsarean operation, and extracting the whole mass, or by a smaller opening, and after evacuating the contents of the tumour, dragging the empty sac through the aperture, and then separating it from its connexions. The chief difficulties opposed to these operations are—1st. The great uncertainty of the diagnosis: cases are recorded where the mistake was not discovered till the abdomen had been opened. 2d. Extensive and firm adhesions between the ovarian tumour and other organs, rendering the extirpation impossible. It is quite beyond the powers of diagnosis to ascertain the existence of such adhesions prior to the operation. 3d. The uncertainty whether the surgeon has to do with a simple ovarian tumour, or with cancerous degeneration, which is not unfrequently the case. 4th. Hemorrhage from the tumour itself, and the difficulty of preventing a flow of blood into the peritoneal cavity during the operation. 5th, and lastly. The dangers to be apprehended from a difficult operation and its sequelæ, as inflammation, suppuration, exhaustion, &c.—It is indeed strange that, with so many surrounding difficulties, such a great amount of success has attended the operation: in thirty cases the mortality was only one in four. Still it cannot be defended, as we must not only take into consideration the accidents resulting from it, but the important fact, that dropsy of the ovary may exist for a series of years without the health being materially compromised. Who, under these circumstances, would dare to place the patient in danger of rapid dissolution?"

The next communication, one by Dr. Bird, is chiefly occupied with the pathology and diagnosis of ovarian disease; of this the main features may be thus briefly recapitulated.

In the first part of his essay the author alludes to certain changes of structure in ovarian cyst, which he refers to the constitutional depression consequent upon the exhibition of remedies of supposed efficacy in the treatment of the disease, such

as mercury and iodine, or which in some instances are induced by pressure, the result of distension or external compression. The latter proceeding, adopted by Mr. Brown, he regards as always useless, and sometimes pernicious.

In respect to the duration of life in those afflicted with ovarian disease, the author's opinions are more unfavourable than those generally entertained; his personal experience in fifty cases leading him to the belief that three years from the commencement of the disease is the average. [Our readers, we suspect, will place but little reliance on a deduction derived from such limited means of observation.]

The author entertains favourable notions of the facility with which various circumstances attendant upon ovarian tumours can be ascertained, such as the existence or non existence of adhesions, the presence of solid deposit mingled with the cyst, their attachment to the uterus, &c. The evidence upon which he confides in the inquiry as to the existence or non-existence of peritoneal adhesion, is deduced chiefly from the alteration effected in the position of the tumour by the movements of respiration. The presence of solid matter is discovered by palpation, and by certain peculiarities as to the perception of fluctuation. The direction of the os uteri and the mobility of the organ, aided by Dr. Simpson's uterine sound, afford the requisite information as to the connexion or non-connexion of the uterus with the tumour. One remark made by Dr. Bird is important, in reference to a means of diagnosis much relied upon in the history of ovarian tumour, namely, the commencement of the swelling on one side of the abdomen. This the author believes to be by no means generally the case, and that when it does occur, it is rather diagnostic of the admixture of solid matter with the tumour than of ovarian disease in the abstract. We need hardly state that the author is a warm advocate of the operation of excision, as it is well known to have been in his hands attended with an unusual share of success.\*

13. *Cases of Ovariectomy.*—In accordance with the intention expressed in a former Report, we shall now record the instances of this formidable operation which have taken place during the previous six months.

1st, *Successful cases.* *Case by Mr. Burd.*—The following successful removal of an ovarian tumour, complicated with pregnancy, is reported by Mr. Burd.

A. J.—, aged 25: inclined to be stout; has been married four years, and had three children. She was admitted into the Salop Infirmary, February 28th, 1846. She stated that she detected a tumour in the belly after her last confinement, which occurred seven months since. All her confinements have been natural and favourable. The measurement of the abdomen, at the time of her admission, was thirty-seven inches: the tumour was movable, and fluctuation was perceptible in it. An elastic bandage to support the swelling was recommended, as well as abstinence from all medical treatment. On September 5th she returned to the Infirmary, much increased in bulk, the measurement over the umbilicus being then 45 inches, and fluctuation had become distinct. Above the navel the swelling was irregular, and apparently solid. Her dyspnoea was urgent, and she was unable to lie down. She said she had menstruated regularly since her return home, and was satisfied she was not pregnant, a statement which the absence of all local signs of that condition seemed to confirm. It being now determined to remove the tumour by operation, on the 15th of September the patient was conveniently placed for the purpose, and a small incision was first made through the parietes of the abdomen, which was subsequently extended upwards to within an inch and a half of the ensiform cartilage, and downwards to the pubes: no adhesions presented themselves. The largest cyst was then tapped, and more than three gallons of glairy fluid withdrawn: the tumour was then drawn out, and it was found that the uterus was in a gravid state, pregnancy being advanced probably to the third or fourth month. The very thick pedicle required the application of strong twine ligatures in three different compartments; and yet it was further thought desirable to tie each of the divided vessels separately after the pedicle was divided. The wound was then closed by sutures and adhesive plaster, and an opiate administered, when the patient was placed in bed. The tumour was found to consist of a multiplicity of sacs, surrounded in some instances by solid matter: their walls

\* Lancet, Nov. 28, 1846.



were thick and solid, and the whole mass removed was computed to weigh about 50 pounds. In the evening the patient had uterine pains, for which an opiate was administered. On the following day (16th) she had much pain and tenderness in the left iliac region, for which she was bled to four ounces in the afternoon, with marked relief. On the 17th abortion took place, without the occurrence of hemorrhage. In the evening of the same day there was much tympanitis, with restlessness and hiccough. For this brandy and water with ammonia, and three grains of opium powder, were given. On the 18th she had rallied, but again sank towards evening, though beef-tea, milk, &c., had been allowed through the day. Opium and ammonia were again administered with decided benefit. She was further ordered ox-gall, ten grains; opium powder, three grains; which prescription was repeated at intervals, when called for, through the remainder of the time that the patient was under treatment. It was some time, however, before she threw off all alarming symptoms: for on the 20th her features were sharpened, her extremities cold, and she suffered from spasmodic contractions of the diaphragm; and on the following day her abdomen was much distended with flatus, and tender. These symptoms, however, yielded to the exhibition of the opium and ox-gall, together with gentle stimulants, and the employment of fomentations and an injection. After the close of the month she rapidly improved, and early in November the wound was quite healed. The last report of her (on December 24th) states, that since leaving the hospital she has felt no further inconvenience, and was then fully employed in her domestic duties. The author remarks, that he did not consider the operation justifiable when his patient was first an inmate of the infirmary, because her general health was undisturbed; and that the fact of her pregnancy being subsequently overlooked is referable to the absence of all signs of that condition, as well as the recurrence, according to the patient's account, of regular menstruation. An explanation of this apparent return of the catamenial period was afforded by examination of the aborted placenta, which was found to have been partially separated at one point, with a considerable clot adhering. It was not peritonitis, but the frequent occurrence of collapse, which excited alarm; and this was invariably and readily relieved by the administration of opium, ammonia, and brandy, of which the first exercised the most potent and immediate influence in rousing the system.\*

*Case by Mr. Bainbrigge.*—The subject of this case was a lady, aged 31, who consulted Mr. Bainbrigge for a large tumour in the abdomen, and another which projected from the vagina, both yielding a distinct sense of fluctuation. The symptoms and history at once decided Mr. Bainbrigge to consider it a large unilocular cyst protruding in the two directions above mentioned.

After consultation with Sir C. Clarke, the patient was tapped by Sir B. Brodie, with evident advantage to her general health; but both tumours soon refilled.

In order to conceal the deformity, the lady adopted the strange expedient of compressing the abdomen by means of a piece of wood placed on the abdomen, and secured with a bandage. As a consequence, probably, of the treatment, the cyst ruptured, and general peritonitis ensued. From this, however, she recovered, and it was then found that the dropsical tumour had entirely disappeared.

It now happened that a tumour exhibited itself on the opposite side, in its commencement and progress, similar to the previous one, with the exception that there was no protrusion of the sac per vaginam. The patient being anxious for something to be done, and having heard of the operations for ovariectomy, Mr. Bainbrigge yielded to her request, but performed an operation which was modified as follows:

An incision was made through the abdominal parietes, about three inches in length, a portion of the cyst was drawn out, the contents were evacuated, with the precaution against the escape of any into the peritoneal cavity; a portion of the cyst was then removed, its edges fixed to the outer wound in the abdominal parietes, and the cyst allowed to assume a suppurative action, in the hopes that it would finally contract and disappear. These hopes were not disappointed, for on the fifth day the discharge became purulent, and was maintained such by stimu-

\* Reported in *Lancet and Med. Gaz.*, April 1847.

lating injections. In about three months the discharge was greatly diminished, and her general health was completely restored.\*

[In reporting this case as a successful cure of ovariectomy, the reader's attention must be called to the important modification adopted by Mr. Bainbrigge, one which he subsequently (Jan. 18) shows to be warranted by the result of former operations of the same kind. Neither is the incision of such a length as to be in itself formidable, nor is there any necessity for the rough handling of the interior of the abdomen, which must almost necessarily excite inflammation in the ordinary method of excision.]

2d. *Fatal Cases.* *Case by Mr. Page.*—A female, aged 39, was in perfect health a year before the operation, when she first perceived a tumour on the left flank, which had now reached the size of the full term of pregnancy, and her general health had become considerably impaired. The tumour was movable in all directions, and the state of the os and cervix uteri was natural. After a judicious delay, during which means were adopted for the improvement of her general health, the operation of excision was performed. The room being heated to 78° Fahr., and the requisite preparation being made, an incision was commenced an inch below the umbilicus, and extending downwards about an inch and a half through the abdominal parietes to the surface of the tumour. A finger was now introduced into the wound, and carried, in every direction, as far as it could reach: no adhesions could be detected; and from the great mobility of the tumour, none were supposed to exist. The incision was now extended downwards, about an inch further, and the margins of the wound being kept in close approximation with the surface of the cyst, it was seized with a vulsellum, and transfixed by a long, curved trocar, the clear fluid which immediately flowed through the canula being carried to a vessel, by the side of the table, through a long tube made for the purpose. Gentle traction was now kept up with the vulsellum, and the cyst became gradually extruded as it was emptied of its contents. A considerable portion had been thus exposed, when some difficulty was experienced in its further withdrawal; and believing that this might be owing either to a secondary cyst in the walls of the primary one, or to some adhesions, the incision was extended about half an inch further, when immediately the greater part of the remainder of the sac was protruded, having firmly adherent to and in close contact with it several inches of intestine. A careful examination was now made of the very extensive base of the tumour, which was found, throughout its whole extent, so closely connected with other important structures, that no attempt at separation could be for a moment entertained. It was, therefore, determined to elevate the cyst, and apply a ligature as near to its base as possible. A ligature of whipcord was accordingly placed around it, and tied as tightly as could be done by two persons, and the cyst removed to within half an inch of the cord, when, there being no appearance of hemorrhage, the base of the tumour, with its attachments, was allowed to recede into the abdomen, the ligature passing out of the lower end of the wound. The edges of the wound were now brought together with four interrupted sutures, and the flannel bandage applied so as to give gentle support to the abdomen. The whole operation, which lasted about twenty-five minutes, was borne with considerable fortitude, and she was taken to bed without complaining of much suffering, but in a very pale, feeble, and depressed condition. A drachm of laudanum was given her in some camphor mixture, which she rejected in about a quarter of an hour, when she complained of great pain in the abdomen and loins. These formidable symptoms continued, and the patient sunk about midnight.

On examination, it was found that the base of the tumour was composed of ligament of the ovary and the broad ligament of the uterus, and was closely adherent to the meso-colon and meso-rectum. The ligature firmly embraced the greater part of the circumference of the base, but a portion had escaped and given rise to the hemorrhage: there was no trace of peritonitis.

As Mr. Page properly remarks, the above case exhibits in the clearest manner the great uncertainty of diagnosis, the strongest objection to the operation. The history prior to admission was such as not to lead to the anticipation of any inflammatory adhesions. The free mobility of the tumour, as ascertained by careful

\* *Prov. Med. Journ.*, Dec. 16, 1846.

and repeated manipulations, seemed fully to confirm this impression; and when the tumour was seen gently protruding from the wound, any great obstacle to its removal seemed almost impossible; yet so firmly and extensively was it united to the moveable structures at its base, that its entire separation was impracticable, and we were compelled to adopt the painful but apparently only alternative, of removing as much fluid as possible, and preventing the occurrence of hemorrhage by the application of a ligature.\*

*Mr. Southam's Case.*—A second fatal case is related by Mr. Southam, in the last volume of the "Transactions of the Provincial Medical and Surgical Association."<sup>†</sup> The tumour was a multilocular cyst mingled with solid matter, of a cerebritiform nature. The operation was performed under what are supposed to be favourable circumstances, but the patient sunk on the sixth day from peritonitis, conjoined with a deficiency of constitutional powers.†

## § II. Diseases of Pregnancy—Labour—the Puerperal State.

15. *Vomiting during Pregnancy.*—M. Bretonneau professes to have discovered an efficacious mode of treating this distressing symptom. Concluding from analogy, that these vomitings are purely sympathetic, and depend upon a deficient dilatability of the uterus in proportion to the development of the ovum, he causes the abdomen to be rubbed with an ointment composed of extract of belladonna, and laid in the proportion of one part to five, which he affirms has far more power than the internal administration of the remedy.‡

Dr. Simpson relates a case in which he was able to control the vomiting after other means had failed, by the inhalation of landanum from an ether inhaler.§

16. *Labour complicated with Prolapsus Uteri.*—A case very similar to that reported in vol. iii., p. 227, has recently been narrated by Dr. Gardner, of New York. When seen, the organ had prolapsed several inches beyond the external parts, and was momentarily advancing under the influence of powerful expulsive pains, and a rigid condition of the os uteri. Under these circumstances Dr. Gardner incised the os with a bistoury, and the labour was speedily completed. The infant was born alive, in which circumstance the present case differs from the majority on record.||

17. *Influence of Sex of the Child upon Labour.*—M. Chereau has tested the truth of the researches of Professor Simpson on this subject (see Abstract, vol. i. p. 240), and has attained nearly similar results.¶

18. *Uterine Hydatids.*—Mr. Edwards has related a case which offers some peculiarities, the chief being the absence of watery discharges, and the substitution of repeated hemorrhages. The latter circumstance is attributed by him to the presumed attachment of the mass to the cervix uteri.\*\*

19. *Spontaneous Evolution.*—At a meeting of the Obstetrical Society of Edinburgh, at which a discussion followed the narration of some cases of spontaneous cephalic and pelvic evolution, Dr. Simpson gave the following general deductions respecting the process. He observed—1st. That spontaneous evolution in transverse presentations was not so rare as some authors averred, and that it would probably occur oftener if timely assistance were not proffered. 2d. That under some circumstances arm and shoulder cases should probably be left to be expelled by the mechanism of spontaneous evolution, assisting, if necessary, this mechanism by art. 3d. That this ought to be our practice if, in an arm or shoulder case, the chest and trunk of the child be already thrust down into the cavity of the pelvis; for to turn under such a complication, and with that object, attempt to push back the body of the child into the cavity of the contracted uterus, would risk a rupture of its coats. 4th. That if the process of spontaneous evolution fails, two operations have been recommended to effect delivery, viz. evisceration and decapitation. 5th. That evisceration is only applicable to cases of *pelvic* spontaneous evolution demanding operative interference; and decapitation is only applicable to *cephalic*

\* Lancet, Dec. 12, 1846.

† Trans. of the Prov. Med. and Surg. Association, vol. iii. New Series.

‡ Bulletin de Thérapeutique, Août, 1846.

§ Amer. Journ. of the Med. Sciences, Oct., 1846.

\*\* Lancet, March 13, 1847.

¶ Month. Journal, April, 1847.

¶ Gaz. Méd., Jan. 30, 1847.



spontaneous evolution. 6th. That in all common transverse presentations, seen before the body and bulk of the infant is doubled and thrust into the cavity of the pelvis, *turning* is the proper practice. 7th. That a child of common size would never, in a transverse presentation, be thrust into the cavity of the pelvis, unless the pelvis were large in its dimensions; and hence, when the process of spontaneous evolution is found in an advanced stage, it is almost a certain sign that the pelvis is of such a size as to give a chance of its completion.\*

20. *Uterine Hemorrhage*.—Mr. Torbock proposes to treat uterine hemorrhage, after delivery, by the injection of stimulating substances into the cavity of the uterus, such as spirits of wine, brandy and water, &c. He states that uterine action is speedily induced by this measure, and that in numerous cases no injurious consequences have been remarked.

[It may be observed that the value of stimulating uterine injections, in accidental hemorrhage, had been previously insisted upon by Mr. Cattell, in a communication made to the "Lancet," Dec. 6. 1845: so that, whatever originality there may be in the plan is clearly to be attributed to this gentleman, and not to Mr. Torbock. Mr. Cattell asserts his claim in "Lancet," Nov. 7, 1846.]

21. *Placenta Prævia, General Principles of Treatment in*.—The very evident misconception of Professor Simpson's views respecting the extraction of the placenta, as a means of arresting unavoidable hemorrhage, has induced him to publish a paper, in which his opinion as to the correct management of these cases is concisely stated. Setting aside (he observes) the minor and palliative measures, such as quiet, cold, &c., the management of placental presentations, when interference is demanded, should be regulated upon the following principles:

"In some cases no active interference is required.—In placental presentations, we deem ourselves called upon to interfere operatively with the avowed object and purpose of saving the patient from the dangers of the attendant hemorrhage. Hence it necessarily follows that it would not be requisite to adopt any special form of artificial aid or delivery, if in any case, or cases, this complication were accompanied with little or no flooding. Now, in some instances of partial presentation of the placenta, the flooding ceases altogether, or abates to a safe degree, when, during the natural progress of labour, the membranes rupture and the head descends. And, in some rare cases of complete presentation of the placenta, where the vascular bleeding structure of the placental mass has become obstructed and obliterated previously to the supervention of labour, little or no hemorrhage has accompanied the process of delivery. In other instances, before any operative aid can be applied, the hemorrhage suddenly and entirely ceases, in consequence of the placenta becoming totally separated, and expelled by the advancing head of the infant. Under such circumstances and others where the present or prospective dangers attendant upon operative interference would be evidently greater than the present or prospective dangers attendant upon the existing degree of hemorrhage, any form of forced delivery would, I believe, be improper. But cases of placental presentation in which we can thus leave the delivery altogether to Nature are rare. Generally, we require to adopt some active measures, with the special object of saving the patient from the actual or threatened dangers of the hemorrhage. These measures should, I conceive, be one or other of the plans which I have now to proceed to mention, viz., 1st, the artificial evacuation of the liquor amnii; or, 2d, the artificial extraction of the child; or, 3d, the artificial separation of the placenta.†

"1. *Artificial evacuation of the liquor amnii*.—In partial presentations of the placenta, rupturing the exposed portion of membranes (according to those principles that are generally followed in accidental floodings) is a measure which sometimes proves quite adequate to arrest, or abate, the hemorrhage to such an extent that the delivery may be afterwards entirely committed to the efforts of Nature. Various old authors, as Daventer, Delenrye, and Astruc, have described this same plan of treatment as applicable to complete, as well as to partial, presentations of the placenta, with this difference, that in the complete variety the liquor amnii is evacuated, not by puncturing the membranes only, but by perforating the opposing placental structure with a trocar, catheter, or other analogous instrument. And

\* Month. Journ., May, 1847.

† Medical Times, Nov. 1846.

the later records of midwifery contain several cases in which this perforation of the placenta has, in complete presentations of the organ, been successfully adopted, both as regards the mother and the infant.

"Several high authorities, however, in midwifery have altogether repudiated the evacuation of the liquor amnii, both in partial and in complete placental presentations. They have done so principally under the idea that if this measure failed to suppress the flooding, the previous escape of the waters would render any subsequent practice that might be required more difficult of execution. This objection certainly applies to turning, as a subsequent practice, but it does not apply to artificial detachment of the placenta as an ulterior measure of treatment.

"The artificial evacuation of the liquor amnii, by perforating either the placenta or membranes, affords assuredly a simple, but by no means a certain, method of restraining the flooding in placenta prævia. It is a practice which is undoubtedly attended with less success in unavoidable than in accidental hemorrhage. But still I believe it to be a mode of treatment to which we may occasionally have recourse with great advantage, especially if there is originally a large quantity of liquor amnii present, and if the flooding is great, while the os uteri is still small and undilatable. We must beware, however, of trusting too much or too long to this, or to any mere palliative measures. Whatever we do, should, if possible, be always done before the hemorrhage is allowed to proceed to such an extent as to induce any very marked symptoms of constitutional debility and depression in our patient. If a decided state of exhaustion has been allowed to supervene, either of the two remaining and ulterior measures, extraction of the child, or extraction of the placenta, will be but too liable to prove futile and unsuccessful in their results.

"II. *Artificial extraction of the child.*—This forms the general principle of management upon which unavoidable hemorrhage has hitherto been treated by most authors and practitioners. The professed object of the practice is this; by forcing the delivery of the child, and thus emptying the uterus, the organ is thrown into full contraction, and hence further loss of blood prevented. The mode in which the indication is fulfilled is in some degree regulated by the state of advancement of the infant, its presentation, &c. In a great proportion of cases the accompanying hemorrhage requires interference at so early a stage of the labour, that the only proper and possible mode of delivery is by the operation of turning; and various authors, as Drs. Denman, Burns, Hamilton, Conquest, and others, speak of turning as the *sole* and *only* mode of treatment applicable to cases of placental presentation. The great objection to it is the imminent danger which the mother necessarily runs, from the risk of some laceration of the cervix uteri during this mode of forcible delivery; and any degree of laceration of this part is especially dangerous in placental presentations; for in placental prævia the structure of the cervix is extremely vascular, being permeated with those numerous and enlarged vessels which are always developed, in a high degree, in the uterine walls opposite the seat of the placenta. The laceration of these vessels leads to immediate danger, from draining hemorrhage after delivery, and to more remote danger, from inflammation being liable to spring up in the torn and wounded sinuses of this part, and uterine phlebitis following as a direct consequence. But still I hold turning to be the proper mode of practice in unavoidable hemorrhages, which cannot be restrained by less active measures, and where immediate delivery is demanded, with the os uteri well dilated, or easily dilatable, and the child still alive, or presenting transversely.

"Besides turning, other modes of artificial delivery of the infant are occasionally resorted to in placental presentations. If the attendant flooding is such as not to require forced delivery till after the waters are evacuated, and the head well advanced in the passages, then version would be dangerous and inapplicable, and the use of the forceps offers the safest and easiest mode of extracting the infant. Further, in original pelvic presentations, extraction may be at any time effected, when required, by seizing and dragging at the feet of the child.

"III. *Artificial separation of the placenta.*—The arrestment of unavoidable flooding by total detachment of the placenta should, I believe, be our line of practice when the combination of circumstances is as follows, viz., the hemorrhage is so great as to show the necessity of interference, and is not restrainable or restrained by milder

measures (such as the evacuation of the liquor annii); but, at the same time, turning, or any other mode of immediate and forcible delivery of the child, is especially hazardous or impracticable, in consequence of the undilated or undeveloped state of the os uteri, the contraction of the pelvic passages, &c. Or, again, the death, prematurity, or non-viability of the infant, may not require us to adopt modes of delivery, for its sake, that are accompanied (as turning is) with much peril to the mother, provided we have a simpler and safer means, such as the detachment of the placenta, for at once commanding and restraining the hemorrhage, and guarding the life of the parent against the dangers of its continuance. Hence, as I have elsewhere stated, I believe that the suppression of the flooding by the total detachment of the placenta will be found the proper line of practice in severe cases of unavoidable hemorrhage, complicated with an os uteri so insufficiently dilated and undilatable as not to allow of version being performed with perfect safety to the mother;—therefore, in most primipare; in many cases in which placental presentations are (as very often happens) connected with premature labour and imperfect development of the cervix and os uteri; in labours supervening earlier than the seventh month; when the uterus is too contracted to allow of turning; when the pelvis or passages of the mother are organically contracted; when the child is dead; when it is premature and not viable; and where the mother is in such an extreme state of exhaustion as to be unable, without immediate peril of life, to be submitted to the shock and dangers of turning, or forcible delivery of the infant. This enumeration is far from comprehending all the forms of placental presentations that are met with in practice; but it certainly includes a considerable proportion of the cases of this obstetric complication, and among them all, or almost all, of the most dangerous and most difficult varieties of unavoidable hemorrhage. In adopting the practice, one error, which I would strongly protest against, has been committed in some instances. Besides completely detaching and extracting the placenta, the child has subsequently been extracted by direct operative interference. If the hemorrhage ceases, as it usually does, upon the placenta being completely separated, the expulsion of the child should be subsequently left to nature, unless it present preternaturally, or the labour afterwards show any kind of complication, which of itself would require operative interference under any other circumstances. Both to detach the placenta and extract the child would be hazarding a double instead of a single operation."

*Comparative mortality attendant upon turning, and upon the total separation of the placenta.*—On this point Dr. Simpson remarks, "one circumstance which strongly led me to advocate, in unavoidable hemorrhage, the preference of the detachment of the placenta to the operation of turning the child, was the fact of the great mortality which followed the latter operation, as contrasted with the few mothers that died when the placenta was spontaneously expelled, or accidentally extracted before the infant. In speaking of the relative maternal mortality resulting from the two modes of practice, Mr. Barnes very properly points out that when I spoke of the mortality attendant upon the separation of the placenta before the child as amounting to one in fourteen only (ten in 141 mothers having died), I had included cases in which the placenta was thrown off spontaneously before the child, along with others in which it was artificially detached; and he doubts if the results would not be 'widely different' if the statistics comprehended the latter class of cases only, 'in which the severe operation of detaching the placenta, by the introduction of the hand, had been resorted to.' The best answer to this objection consists in a statement of the results hitherto obtained from the practice of artificially detaching the placenta.

"Seventeen cases," says Dr. West, 'have been recorded in the English journals, during the past fifteen months, of detachment of the placenta before the birth of the child in cases of placenta previa. In the case recorded by Dr. Simpson, to whom it had been communicated by Mr. Cripps, the placenta was removed by an ignorant midwife, and ten hours elapsed before the child was born, during which time, however, no hemorrhage took place. In sixteen out of the seventeen cases the bleeding is said to have ceased immediately on the detachment of the placenta; but Dr. Everitt mentions that although the flooding abated on the separation of the placenta, it did not entirely cease until after the application of cold externally; and he insists on the fact as proving, in cases of this kind, the hemor-



rhage comes from the uterine as well as the placental ends of the lacerated veins. The life of the mother was preserved in every case but one (out of the seventeen), and then the previous hemorrhage had been so profuse as almost to exhaust the patient, who died three hours after delivery. All the children were still-born, except in the case related by Mr. Stickings.<sup>27</sup>

"I do not stop to inquire whether in one and all of these seventeen cases the artificial detachment and extraction of the placenta ought to have been followed. At present I adduce them, not as affording evidence of the propriety of the practice, but as affording evidence of its safety.

"In proof of the maternal mortality under the old and recognized forms of practice being greatly higher than under the proposed plan of the extraction of the placenta before the child. Mr. Barnes refers, apparently with some hesitation, to the statistics collected by Dr. Churchill and myself, as showing that one in every three mothers was usually lost in placental presentations. Among 174 cases of unavoidable hemorrhage, collected by Dr. Churchill, 48 mothers died. I have now before me a carefully collected list of 654 cases of placental presentations, reported by Mauriceau, Portal, Giffard, Smellie, Rigby, Clarke, and Collins, Schweighauser, Lachapelle, Drs. John and Francis Ramsbotham, Lee, Lever, and Wilson. Among these 654 cases, 180 mothers died, or 1 in 3.6%. In corroboration of the correctness of the statistical view which Dr. Churchill and I have taken of the extent of maternal mortality in unavoidable hemorrhage, I would further beg to refer Mr. Barnes to the observations of Dr. Robert Lee. In his 'Midwifery Lectures' (pp. 370, 371), published in 1844, Dr. Lee states a number of statistical facts regarding uterine hemorrhage from placental presentations, and, amongst other matters, he mentions the result to the mothers in a considerable number of cases. I shall throw all his evidence on this last point into a tabular form.

"*Maternal Mortality in Seventy-two Cases of Placental Presentations, noted by Dr. Lee.*

Reporters.	No. of cases reported.	No. of mothers lost.
Dr. Clarke . . . . .	14	1
Dr. Collins . . . . .	11	2
Dr. Ramsbotham . . . . .	19	8
Dr. Lee . . . . .	38	14
	—	—
	72	25

"Hence, according to Dr. Lee's collection of statistics, the maternal mortality in unavoidable hemorrhage, amounting to twenty-five in seventy two cases, is rather more than one in three. And this evidence of Dr. Lee will probably be regarded as the stronger, seeing that it is totally unprejudiced in its character; for, in 1845, Dr. Lee called into doubt the accuracy of all collections of statistical data made by others, and which led to the idea that the general maternal mortality in unavoidable hemorrhage was so great as to approach one in three. At that time he was, I believe, unaware of the general result of his own previously published collection of statistical data relative to the point in question."

22. *Rupture of the Uterus; with Recovery.*—An instance of this unusual termination is reported by Mr. Thomas, in the case of a lady, æt. 30, in labour with her first child. There could be no doubt as to the diagnosis of the accident, as a tumour was felt in the upper portion of the abdomen, which subsided as the child was removed by forceps; and, moreover, the rent in the uterus was distinctly ascertained by internal examination. The child was born alive.\*

23. *Puerperal Fever.*—Dr. T. S. Lee has recorded two fatal cases of this disease, which afford additional evidence of its erysipelatous nature. The child of the first woman died of erysipelas when a fortnight old, and his nurse had an attack of the same disease. In the second case, an erysipelatous blush appeared on the nates before death; the surgeon who attended her became himself the subject of erysipelas, and one of his servants had inflammation of the lymphatics of one arm. The author recognizes four forms of puerperal disease, which are all classed under the term puerperal fever: viz., pure inflammation, infectious fevers, gangrenous inflammation following injury to the soft parts, and puerperal erysipelas. He fur-

\* Prov. Med. and Surg. Journal.

ther suggests that the malignant form of puerperal fever should be characterized by the term puerperal erysipelas, as distinctive of its nature\*.

24. *Operative Midwifery. Cesarean Operation.*—This operation has been performed in four instances subsequently to our last report.

The first case is one which occurred at St. Bartholomew's Hospital, under Mr. Skey. The operation was rendered necessary by a deformed pelvis, and was performed under the influence of ether. Both mother and child were lost.†

In a second instance, the operation was resorted to after the death of the mother, who died suddenly from disease of the heart. The child was saved.‡

The third was performed also after the death of the mother, at La Pitié. This infant perished.§

The fourth case is a remarkable one. Labour-pains are said to have been arrested by an attack of peritonitis, which was not subdued for a month. At the end of that time a putrid discharge from the vagina led to an examination, and the rough and denuded cranial bones of a fœtus were discovered. Finding that all attempts to remove the infant per vias naturales failed, and that the woman was sinking, Dr. Herndon, of Fredericksburg, U. S., who narrates the case, performed the Cesarean operation, and removed a full-sized putrid fœtus. The woman recovered.||

25. *Midwifery Statistics.*—The following statistical record of 21,804 midwifery cases has been drawn up by Professor Schwenker. Of these 20,610 were presentations of the head; 50, face; 97, breech; 116, feet; 3, knees; 250 were twin cases; 1, triplet; 153, cross births; 118, abortions; 127, premature; 258, stillbirths; 21, monsters. Total, 21,804 cases.

Manual interference was required in 1556 cases. Version was performed 183 times, in 76 of which the mother and child were saved; in 93 the child was lost, and in 14 the mother. Spontaneous evolution occurred twice. The forceps were applied in 194 cases; with success both to mother and child in 139; with death of the child in 48, and of the mother in 7 cases. The necessity for the forceps was occasioned by the size of the head in 48 cases; by pelvic deformity in 20; by deformity of the soft parts in 3; by accidents in 123.¶

Dr. Robert Lee has published a table of 59 cases of placental presentation, in which the general mortality to the mother amounted to 15, or 1 in 4. In 11 of these the presentation was complete. In 34 of these turning was performed; with success in 23; unsuccessfully in 11. The placenta and child were spontaneously expelled in 5, all of which recovered; in 1 only is the hemorrhage mentioned as continuing after the expulsion of the placenta.\*\*

### § III. Diseases of Children.

26. *Diseases and Malformations of the Fœtus.—Absence of the Umbilical Cord.*—At a meeting of the Medical Faculty of Madrid, an instance of this exceedingly rare malformation was reported, occurring in a fœtus of eight months. The abdominal walls were entirely deficient, the viscera being covered by a serous membrane only, which adhered to the placenta by a conical prolongation, but without any trace of umbilical vein or artery.†† A similar case is to be found in the "Medical Gazette," 1842, p. 249.

27. *Human Triplet.*—A malformed child, so called from its presenting the appearance of three legs, is described and figured in the last volume of the "Medico-Chirurgica Transactio," by Mr. Acton. The child is represented as being lively and healthy, and perfectly formed above the umbilicus. Below this point and to the right and left of the median line are two distinct penes, of normal direction and size. Each is provided with a scrotum, the outer half of each containing a testicle. Between and behind the legs is seen another limb, or rather two limbs united together throughout their entire length. The anus occupies its usual situation, and the functions of the bowels are duly performed. Below this the thigh of the compound limb equals in size the buttocks of a young child. Urine passed at the

\* Month. Journ., April, 1849.

† Reported in Med. Times, Feb. 6.

‡ Amer. Journ. of the Med. Sciences, Oct. 1846.

¶ Gaz. Med., Feb. 13, 1847.

\*\* Lancet, May 15.

† Lancet, Feb. 6, 1847.

§ Gaz. des Hôpit., Dec. 29

†† La Facultad., Oct. 1846.

same time from both penes. Mr. Acton mooted the question of the removal of this supplementary limb, which he considered a feasible operation \*

28. *Cause of Mortality in Still-born Children.*—The causes of death in still-births, with the means of preserving the infant's life, have been made the subject of an ingenious brochure by Dr. Richard King, in which the author endeavours to show that the mortality arises from syncope, and not from asphyxia, as is commonly thought to be the case, and that the great danger to be dreaded in tedious or abnormal labours is not the compression of the cord so much talked of by accoucheurs, but its non-compression; so that the fœtal blood, as the placenta becomes detached, is, as it were, sucked up by that body, and the child is in fact thus, to all intents and purposes, rendered ex-sanguine. The treatment which the author suggests, as indicated by this theory, is the compression of the cord under certain circumstances, so as to prevent the possibility of that congestion of the placenta which he regards as the active cause of the death of the still-born infant. The arguments upon which the author founds his opinions are selected with judgment, and the work is altogether worthy of the best attention of the obstetrical practitioner.†

29. *Diseases of Infancy and Childhood.*—The only work which we have occasion to allude to on this subject is one by M. Legendre, containing the six following memoirs: 1. On tubercular meningitis. 2. On sanguineous effusions into the arachnoid membrane. 3. Researches on some diseases of the lungs. 4. On some of the manifestations of scarlatina. 5. On the diarrhœa of infants. 6. On the simultaneous development of the vaccine and variola. Of these memoirs, the first and third are of the most importance.‡

30. *Tubercular Meningitis.*—M. Rilliet has continued his memoir upon this subject, the commencement of which was briefly alluded to in a previous Report. The author, in that portion of his essay, endeavoured to demonstrate that the symptoms which have been denominated "premonitory," are not necessarily attributable to cerebral disease, but are merely expressive of the general process of tuberculization, the main manifestation of which may fall indiscriminately upon any organ of the body. He now continues his labours by a description of the meningitis which occurs as a localization of the tubercular element in the membranes of the brain, insisting chiefly on two points of great interest in the history of the disease, viz., its mode of origin, and the anomalies which attend its progress.

Tubercular meningitis is represented as originating under three forms—*a*, after premonitory symptoms of greater or less duration; *b*, in the midst of apparently sound health; *c*, during the course of tubercular disease of other organs, as of the lungs (phthisis), or abdominal glands (mesenteric disease).

*a*. When tubercular meningitis is preceded by precursory symptoms, the acute symptoms are oftentimes only an exaggeration of the latter. Thus the headache increases, and the violence of its attacks augments. The intellectual dullness of the child also becomes greater; it refuses to walk, becomes restless at night; vomiting and constipation ensue, and the disease is fairly established.

At other times the initiative signs of the meningitis are more easily distinguished from the precursory symptoms, and the transition to acute disease is more sudden. After a period of from seven to fourteen days, those symptoms develop themselves which many authors consider as indicative of the first stage of acute hydrocephalus. The child which to-day, although it has been wasting for some time, has taken its accustomed exercise, to-morrow complains of frontal headache: in a day or two vomits spontaneously. If the child is very young, it becomes peevish, and cries on the slightest touch; if older, it shows a tendency to somnolence; answering when spoken to, but relapsing immediately into sleep. The vomiting at this period ceases, but the bowels increase in obstinacy. Unlike remittent fever, there is but little thirst, and moderate heat of skin. The tongue may be moist and clean; the pulse is irregular, varying from 70 to 140.

In some few cases, the active symptoms commence with more fever: the child complains both of its head and stomach. The bowels are peculiarly obstinate.

\* *Medico-Chirurg. Transact.*, vol. 29.

† *The Preservation of Infants in Delivery*, &c. By Dr. Richard King, 1847.

‡ *Recherches Anatomico-Patholog. et cliniques sur quelques Maladies de l'Enfance.*



The tongue is much furred; in fact, the case so closely resembles infantile fever, that the appearance of the characteristic symptoms of meningitis alone warn the practitioner of his error.

b. When the disease appears during perfect health, its accession is either sudden, when it resembles the form above described, or it is more gradual, when the symptoms closely simulate those which have been considered as premonitory.

In whatever manner, however, the disease has commenced, about the 14th or 16th day a change is observed. The intelligence becomes perverted, the torpor is profound, or, if it abates, it is replaced by shrill and prolonged cries, or by delirium; the child lies on its back; the abdomen is retracted, and the respiration is irregular or suspirious. Five or six days before death, the pupils become unequally dilated, the pulse becomes steadily accelerated, and the respiration is more irregular. The author, like most of his predecessors, remarks upon the fallacious amendment which is occasionally observed.

On the subject of the duration of tubercular meningitis, M. Rilliet comes to the following conclusions, from the examination of a large number of cases:

1st. When meningitis is preceded by regular precursory symptoms, its duration is usually between fifteen and twenty days.

2d. When it arises suddenly, it lasts from twenty to thirty days, seldom less.

3d. When it comes on during chronic tubercular disease in other organs, its duration is very brief, from three to eight days as a mean.\*

Tubercular meningitis is also treated of by Legendre in the memoir above alluded to, under two forms: one in which the tubercular element is latent, the cerebral symptoms being the first to excite attention, the other which supervenes upon some form of tubercular disease. The first is distinguished by the regularity, the second by the irregularity of its phenomena. The dependence of this form of meningitis upon the tubercular diathesis, a point which has only of late years been sufficiently recognised, is very decidedly exhibited in the result of Legendre's dissections. Of 28 cases of meningitis examined after death, he has constantly found miliary granulations or tubercle in other organs. Thus,

In 2 cases they were found in 8 other organs.

3	"	7	"
6	"	6	"
5	"	5	"
6	"	4	"
3	"	3	"
1	"	2	"
2	"	in only 1	"

The relative frequency with which tubercles or granulations were found in other organs, is expressed in the following table:

In the lungs . . . .	27 times.
" bronchial glands . .	24 "
" spleen . . . . .	18 "
" digestive canal . .	13 "
" liver . . . . .	14 "
" kidney . . . . .	10 "
" peritoneum . . . .	6 "
" mesentery . . . .	6 "†

31. *Croup, Tracheotomy in.*—The propriety of this operation in croup has, until lately, been much questioned; but from recent experience (see Abstract, vol. ii. p. 183, and vol. iv. p. 116), it would appear that it holds out a better prospect of success than has generally been supposed. Dr. Biggar has related a case in which this operation was decidedly the means of saving life, and that although many of the conditions which are considered contra-indicatory of it were present. The case which we subjoin is, in many respects, instructive.

On the 10th of November, 1846, Dr. Biggar was called to a strong muscular child, æt. 5½ years, which had been suffering from cough for some days. On the

\* Gaz. Méd., Nov. 7, 14, 1846.

† Op. cit.

evening previous to his visit he became flushed and feverish, and towards morning his voice was hoarse and his respiration croupy. By the time he was seen by the author the dyspnoea and raucous sound on inspiration had greatly increased. A full emetic was immediately administered, and whilst a hot bath was getting ready, two leeches were applied to the throat, and one to the foot, and permitted to bleed whilst in the water; then two grains of calomel with one eighth grain of opium, and one grain of the compound powder of belladonna root, were directed to be given every two hours, and mercurial inunction was plentifully employed to the axillæ and soft part of thighs. Under this treatment the child's condition was much improved before night, and the breathing became easier. He slept some hours at night, and on the morning of the 11th, after a distressing fit of coughing, some tough phlegm, like kid leather, was (according to the nurse's account) thrown up. During this day and the next, the crowing sounds were only to be heard at intervals, and the child seemed so much better that the doses of the powder mentioned above were diminished one half, and the interval of taking them increased to three hours. An emetic was given each day. On the night of the 13th more shreds of lymph were thrown up, and a vast quantity of mucus, some of which was tinged with blood, and all frothy. Dyspnoea increased; the stridor of respiration became constant, and the breathing quicker. Dr. Biggar was sent for at 12 o'clock at night, the messenger stating that the child was dying. When he arrived, the respirations were so quick that little air could reach the lungs; the child's face had become livid; he had also two fits, stiffening himself out and grinding his teeth; every attempt to swallow caused danger of suffocation. The little fellow was sinking fast.

In this predicament, in the dead of night, and at a distance from further advice, with the certainty of death, if some prompt relief were not given, Dr. Biggar proposed to the father to try the doubtful expedient of tracheotomy, and, as all other treatment was evidently useless, he assented. With some difficulty, he succeeded in laying bare the trachea, and seizing it with a double hook, quickly slit three of the rings with a sharp-pointed scissors. There was no hemorrhage of any consequence, but a violent spasmodic attack immediately supervened, and a very considerable quantity of bloody mucus was discharged through the opening. There was no very immediate relief, but by morning it was evident that the extreme danger had passed. Whenever vomiting occurred, mucus was discharged through the opening. The aperture was carefully maintained, principally by the fingers of an intelligent person, and fourteen hours after the operation, the child could breathe with very little stridor by the natural passage when the artificial one was closed. The calomel, opium, and belladonna were actively pushed, and on the third day from the operation, the wound was permitted to close. The child was very weak and exhausted, and unable to take much nourishment; but there was no return of the croupy sounds, though the voice remained hoarse for some time.\*

32. *Leopngismus Stridulus*.—The pathology of this disease appears still to be a *quæstio recata*. The following opinions concerning it were elicited at a discussion held at the Medical Society of London. Mr. Headland considers that the disease originates primarily in the central plexuses of nerves, by which the pneumogastric nerve became irritated, and spasm of the glottis was the result. The congestion of the brain, regarded by some as the proximate cause of the disease, is regarded by Mr. Headland as the effect, and as depending upon impeded respiration. In the treatment he had found some service from painting the throat with dilute sulphuric acid and syrup of poppies. Children who are subject to this complaint, will not bear depletion. He considered that the influence of teething had been much overrated.

Dr. Copland considered that the disease was connected essentially with three distinct states of the system. Thus, it might be the result of teething, of irritation of the digestive organs, or of irritation at the base of the brain. It was occasionally associated with a plethoric habit, but more generally with anæmia. He had seen it frequently in children brought up by hand. The treatment necessarily varied.†

\* Dublin Med. Press, Jan. 6, 1847.

† Reported in Med. Gaz., April 16, 1847.

In an essay on the same subject, Dr. Reid subscribes to the view of the pathology of the disease so ably laid down by Marshall Hall, namely, that it is spasm of the glottis caused by eccentric irritation propagated by the pneumogastric, the fifth and the spinal nerves, and reflected upon the laryngeal nerves. Among the exciting causes of the paroxysms, Dr. Reid regards improper feeding as the principal.

The treatment recommended by Dr. Reid is, in all respects, judicious. The first care should be to lance the gums freely, if there be the slightest appearance of fulness or tenderness. During the paroxysm, cold water is to be dashed repeatedly on the face and chest, and cold air admitted freely into the room. The bowels should be relieved speedily by a warm water enema, and should be subsequently regulated by alterative aperients. The following antispasmodic mixture is recommended: half a drachm of fetid spirit of ammonia, five minims of dilute hydrocyanic acid, seven minims of tincture of henbane, one drachm of spirits of aniseed, four drachms of syrup of orange peel, an ounce and a half of water. Dose: a teaspoonful twice or thrice daily.\*

33. *Infantile Pleurisy*.—Mr. Crisp has a communication in the "Lancet" on this subject, in which he remarks, that it has not been sufficiently noticed by writers on infantile pathology. Underwood does not allude to it. Evanson mentions its occasional occurrence, but that it cannot be recognized during life. West, in his Report on Pneumonia of Children, leads us to suppose that it is not unfrequent, as in 35 cases of pneumonia, recent adhesions were found in 20, the children being from one to two years of age. Billard also admits the frequency of the disease. The symptoms of pleurisy in infants is thus laid down by Mr. Crisp: "The symptoms which I have observed in infantile pleuritis are—great restlessness, violent screaming at the outset, very quick pulse, hot and dry skin, glassy eye, dry cough (this not frequent), the head thrown back, and great apparent pain when the child is placed in the erect position. On the application of the ear or stethoscope, a dry rubbing sound is heard, and the lungs appear to move up and down like the piston of a steam-engine, ('*frictionnement ascendant et descendant*.') This may appear to be a very inapt comparison, but such was the impression produced on my mind in the fifth and sixth cases.

"I am aware, that many of the signs I have described may be present in other diseases, especially in inflammation of the lungs: and that when pleuritis is complicated, as it generally is, with pneumonia, the difficulty of the diagnosis is greatly increased. I believe, however, that when the dry, rubbing sound is heard, with frequent screaming, and apparent increase of pain on elevating the head, the existence of pleuritis is pretty clearly indicated. If the mucous and crepitating rales are likewise heard, and a small portion of the serous membrane only is inflamed, the diagnosis is more obscure: but even with these combinations, I think that a careful investigation will enable us to recognize the disease."

The paper terminates with five instructive cases. The treatment need not be described.†

\* Lancet, May 1 and 8, 1847.

† Lancet, Jan. 16, 1847.



## IV.

# REPORT ON THE RECENT PROGRESS OF CHEMISTRY IN ITS RELATIONS TO MEDICINE.

BY GEORGE EDWARD DAY, M. A. L. M. CANTAB.

Member of the Royal College of Physicians, Lecturer on Materia Medica at the Middlesex Hospital Medical School, and Physician to the Western General Dispensary.

### § I.—*Protein.*

1. In our former Report (July, 1846) we briefly alluded to the fact that Liebig, in a recent number of his journal (*Annalen der Chemie und Pharmacie*, Jan., 1846) had attempted to disprove the existence of protein. Several of his pupils have been since carrying on the investigation of this subject, and they all (with one partial exception) maintain the impossibility of obtaining Mulder's protein, that is to say, a compound entirely devoid of sulphur, and containing only carbon, hydrogen, nitrogen, and oxygen. We shall not, in the present place, enter into the relative merits of the discussion; but those who are anxious to become acquainted with the arguments adduced by the Giessen school may consult the following papers in the numbers of Liebig's "*Annalen*," for the last eighteen months.

1st, Liebig "on valerianic acid, and on a new substance from casein;" 2d, "on the binoxide of protein;" 3d, "on the amount of sulphur in the nitrogenized constituent of peas;"\* 4th, Schossberger "on certain substances extracted from casein;"† 5th, Laskowski "on the protein-theory;"‡ 6th, Rüling, Walther, Verdeil, and Schlieper "on the sulphur contained in albuminous substances;"§ 7th, Kemp "on the protein-theory;"|| and, 8th, Fleischmann "on the existence of non-sulphurous protein."¶

Mulder has admirably defended himself and his protein, in a pamphlet which has been translated into English by Dr. Fromberg, and is entitled, "*Liebig's Question to Mulder tested by Morality and Science.*"

From this little work we may, avoiding all controversial matter, extract much of great physiological interest regarding the history of protein.

a. Mulder alters his formula for this substance from  $C_{40}H_{31}N_5O_{12}$  to  $C_{40}H_{30}N_5O_{12}$ , in consequence of assuming the atomic weight of carbon to be 75.12, instead of 76.437.

β. The following are his directions for obtaining protein: Take a potash-ley, containing  $\frac{1}{50}$  of hydrate of potash; mix it with coagulated albumen, previously washed with water, so as to cause it to dissolve speedily, and let the whole remain upon the sand-bath at a temperature of  $140^{\circ}$ – $176^{\circ}$  F., until the reaction of sulphur no longer increases. Let the liquid remain exposed to the air in a large basin, at the ordinary temperature, stirring it frequently, to oxidize the sulphuret of potassium and hyposulphite of potash. Then precipitate with acetic acid, and repeat the same operation with the same substance, should the precipitate still contain sulphur. Wash it with warm water, digest it with alcohol and ether, and do not consider it pure if any sulphur or sulphuric acid be found in it. When the potash-ley is stronger, the protein, free from sulphur, is formed more readily; but in such case the temperature and time should be regulated accordingly. The reactions occurring between the sulphur and potash are as follows: on dissolving

\* Vol. 57, No. 1.

† Vol. 58, No. 1.

‡ Ibid. No. 2.

§ Ibid. No. 3.

|| Vol. 60, No. 1 (translated from the *Chem. Gaz.* No. 93).

¶ Vol. 61, No. 1.

sulphur in potash, either by fusion or by boiling in water, sulphuret of potassium is formed. From four equivalents of sulphur (4 S) and three of potash (3 K O) there are produced two equivalents of sulphuret of potassium (2 K S) and one of hyposulphite of potash (K O, S<sub>2</sub> O<sub>3</sub>). Sulphuret of potassium (K S), exposed to the air, is converted into hyposulphite of potash (K O, S<sub>2</sub> O<sub>3</sub>): and if an excess of alkali is present, the hyposulphite of potash is converted into one equivalent of sulphite and one of sulphate of potash (K O, S O<sub>3</sub>, and K O, S O<sub>4</sub>): and, finally, if an acid, as, for example, acetic acid, is added to hyposulphite of potash, sulphurous acid (S O<sub>2</sub>) is expelled and sulphur precipitated. When either fibrin, albumen, or casein is treated with a weaker or stronger potash-ley, at an elevated temperature, and acetic acid is then added to the solutions, a large quantity of sulphuretted hydrogen is disengaged. This gas must arise from the sulphur which the potash has separated from the protein compound. The question then is, not whether the potash separates *any* sulphur, but whether it separates *all*. Mulder asserts that all is separated. "In my former experiments," he observes, "when I digested the substance at a higher temperature, I had never discovered a trace of sulphur on heating the protein with potash upon a piece of silver-foil. In now repeating the same experiments, I found not a trace of sulphur in protein from albumen on burning the organic substance with carbonate of potash and nitre."

With regard to the sulphuretted hydrogen disengaged on the addition of acetic acid to the potash-ley, in which fibrin, albumen, or casein is dissolved, Mulder observes that its formation may be easily prevented. If the operation is allowed a few days' time, the hyposulphite of potash has then been converted into sulphite or sulphate of potash, and acetic acid can then no longer expel any sulphuretted hydrogen.

If protein, free from sulphur, is required to be rapidly prepared, a compound of sulphur and protein must be treated with moderately strong potash-ley at a temperature of about 140° F., and the precipitate produced by acetic acid digested not only with the usual series of solvents, but also with some other in which sulphur is soluble.

γ. *The several oxides of protein.*—Mulder gives the following table:

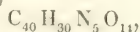
- |      |  |                                  |
|------|--|----------------------------------|
| 1st. | C <sub>40</sub> H <sub>30</sub> N <sub>5</sub> O <sub>12</sub>       | anhydrous protein.               |
| 2d.  | C <sub>40</sub> H <sub>30</sub> N <sub>5</sub> O <sub>12</sub> + H O | hydrate of protein.              |
| 3d.  | C <sub>40</sub> H <sub>30</sub> N <sub>5</sub> O <sub>13</sub>       | anhydrous protoxide of protein.  |
| 4th. | C <sub>40</sub> H <sub>30</sub> N <sub>5</sub> O <sub>13</sub> + H O | hydrate of protoxide of protein. |
| 5th. | C <sub>40</sub> H <sub>30</sub> N <sub>5</sub> O <sub>14</sub>       | anhydrous binoxide of protein.   |
| 6th. | C <sub>40</sub> H <sub>30</sub> N <sub>5</sub> O <sub>14</sub> + H O | hydrate of binoxide of protein.  |
| 7th. | C <sub>40</sub> H <sub>30</sub> N <sub>5</sub> O <sub>15</sub>       | anhydrous tritoxide of protein.  |
| 8th. | C <sub>40</sub> H <sub>30</sub> N <sub>5</sub> O <sub>15</sub> + H O | hydrate of tritoxide of protein. |

The *first* body is obtained from fibrin, albumen, casein, vegetable albumen, hair, and a great many other substances, by dissolving them in a tolerably strong solution of potash, and applying an elevated temperature for a short time. It is thrown down from the clear solution by acetic acid.

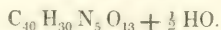
The *second* is prepared from albumen by a very weak potash-ley, at a low temperature. It is not obtained from fibrin, nor probably from hair, nor from horn. Those substances are unfit for yielding hydrate of protein, which contain the binoxide, because, though they also contain protein, they will yield a mixture of this substance with the binoxide. To this class belong horn and hair, which will not yield protein pure, at least until we have discovered a method of separating it from the binoxide. The fibrin of blood is similar in this respect to horn and hair, although Mulder has obtained *anhydrous protein* from it. When a stronger alkaline ley is used, the binoxide may be converted into protein.

The *third* substance has not been discovered.

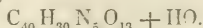
The *fourth*. According to Von Baumhauer (Scheik. Onderz. Deel 2, p. 291), the substance formerly described by Mulder as binoxide of protein, and represented by the formula (C=75.12)



must now be considered



It is difficult in the analyses of these bodies to be certain about one equivalent of hydrogen. Fibrin contains



The *fifth* substance can be obtained from hair and horn, by first precipitating protein with a little acetic acid, filtering the liquid, and then adding acetic acid in excess. There is so great a difference between the quantities of the acid that are requisite for producing these two precipitates, that there need be no fear of an intermixture of one with the other. Besides, protein is soluble in an excess of acetic acid.

Another mode of preparing this substance is to boil fibrin in water; the whole or the greater part of the sulphur is then separated from the organic combinations. "I do not venture," says Mulder, "to decide whether the substance that exists in vitelline, and, in a soluble state also in serum of blood, belongs to the fourth or fifth of the above substances."

The *sixth* substance is still unknown.

The *seventh* is obtained by heating chlorite of protein with strong caustic ammonia; it is coloured like anhydrous protein, when it is prepared from hair.

The *eighth* substance is colourless, and is obtained either by boiling fibrin or albumen in water, or from the inflammatory coat of the blood. It may be prepared in large quantity, by pouring very weak ammonia upon chlorite of protein when still moist. The chlorite is dissolved, and on evaporation to dryness and digestion in alcohol, this substance is left. If prepared by boiling fibrin, albumen, or the inflammatory coat, it must afterwards be heated with alcohol, in order to dissolve an extractive substance with which it is mixed. It is obtained in an insoluble form from horn by means of acetic acid; and also from chlorite of horn, prepared by ammonia and acetic acid.

3. *Casein, albumen and fibrin*.—Mulder's experiments lead him to believe, that what has been called casein consists of several different substances. As Dr. Schosberger is now engaged in the further investigation of them, we shall postpone the consideration of this subject to our next Report.

Albumen, like casein, is regarded by Mulder as most probably a complex body. Our present knowledge of the manner in which protein is produced from albumen and other substances, by the influence of a weak alkaline solution at a certain temperature, opens a new field of inquiry as to the influence of temperature on warm-blooded animals, as to the proportion of alkaline salts in their blood, and as to the production of hair, horn, and other protein compounds that contain much sulphur. If, in the human body, at about 100° F., through the influence of the alkali in the serum of the blood, a part of the sulphur separates from the substance which produces albumen and fibrin, then there will be an uninterrupted production of protein in the blood as long as any alkali remains uncombined.

In regard to fibrin, Mulder now regards the analyses from which he deduced the formula  $10(C_{40}H_{30}N_5O_{12})S P$  as incorrect. "While assuming 75·12 as the equivalent weight of carbon, we cannot at present represent it [fibrin], as regards the carbon, hydrogen, nitrogen, and oxygen, by any other formula than—

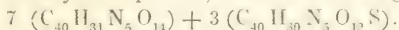
Atoms.		Calculated.	
C	40	.	52·88
H	31	.	6·84
N	5	.	16·60
O	14	.	24·68

"The small difference between the proportions of carbon found and calculated is made up by the quantity of sulphur and phosphorus present in the fibrin analyzed. The composition of the substance in the state in which it was analyzed—probably its normal condition—was (C=75·12).

		Found.	
C	.	.	52·66
H	.	.	6·93
N	.	.	15·51
O	.	.	23·53
S	.	.	1·01
P	.	.	0·33

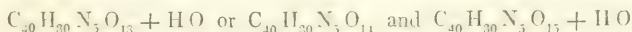


"The formula, therefore, which I formerly gave for fibrin requires modification. I must leave undetermined in what state the phosphorus is contained in it. Neither shall I endeavour to give a more correct explanation of the condition in which the sulphur exists in fibrin, because I cannot adduce any proof in support of it. But since the sulphur of fibrin, like that of albumen, is completely eliminated when the substance is properly treated with potash, and since, nevertheless, a group of the four elements (C, H, N, and O), which admits of being represented by the formula ( $C_{40}H_{30}N_5O_{12}$ ), may be precipitated from the solution, the sulphur must, in a part of this substance, take the place of oxygen. As an example of one way in which this may be explained, I offer the following scheme:



The sulphur may be in a similar condition in albumen. It must be from the substance indicated by the second part of the above formula that the protein obtained by means of potash is derived; whilst that which is represented by the first part is probably held in solution, and cannot be precipitated by acetic acid, but by chlorine alone. . . . It is certain that fibrin is a product of the oxidation of albumen, and is formed in the lungs.

Our knowledge of fibrin having thus advanced nearer to the truth, we find in it a regular connection with what we know of the inflammatory coat and of muscular fibre. I have formerly stated, concerning this inflammatory coat, that when boiled, one-seventh part of it is converted into a soluble substance, which consists in part of the hydrate of tritoxide of protein, and that the rest remains insoluble, and has the properties and composition of fibrin. This change takes place within a quarter of an hour. Fibrin, when boiled for a long period, yields the same products, although in a different proportion. Consequently the inflammatory coat is not fibrin, but contains the substance of fibrin. It is my opinion that the inflammatory coat may be considered as a combination of the hydrates of the protoxide and of the tritoxide of protein. No determinations have yet been published of the sulphur and phosphorus. This body, when boiled in water, is decomposed into



in the proportion of about six equivalents of the former to one of the latter. . . . Regarding muscular fibre, I have formerly stated that from a solution of muscle in a weak potash-ley, Adriani obtained a precipitate by means of acetic acid, and that this precipitate had the same composition as binoxide of protein; and further, that the same substance was obtained by adding carbonate of ammonia to a solution of muscle in acetic acid.<sup>27</sup>

After giving the details of these analyses, he proceeds to describe a repetition of them performed by Adriani and himself. "He employed beef and veal; separated as much as possible the pure muscular portion, cut it fine, and kneaded it with water, till it was perfectly white. It was then dissolved in a potash-ley, at a temperature of about 140° F. This solution was exposed to the air, filtered, and precipitated by acetic acid, the precipitate washed with water, boiled in alcohol and ether, and dried at 266° F.

"The results were as follows: C being = 76.437.

Protein from beef.				Protein from veal.			
0.322 left, 0.003 of ash				0.611 left, 0.005 of ash.			
1				2			
C	. . .	55.69	. . .	55.04	C	. . .	55.46
H	. . .	7.01	. . .	7.23	H	. . .	7.05

"We here find exactly the composition of protein, as I have stated it from the commencement, and have now calculated by assuming 75.12 as the equivalent weight of carbon. The difference between these results and those of Adriani is one equivalent of water.<sup>27</sup>

## § II. *The Chemistry of the Blood.*

2. MM. Becquerel and Rodier\* have continued their researches on healthy

\* Gazette Méd. de Paris, Juin et Juillet, 1846.

and diseased blood. Their memoir is divided into three parts; the first embracing the consideration of some purely physical and chemical results relating to the peculiarities presented by the blood when left to itself, or when submitted to certain influences; the second considering some general results relating to the influence of venesection on the composition of the blood and the serum; while under the third head, they treat of the results obtained by studying the composition of the serum in a number of diseases.

Under the first head there are several points to be considered. The various albuminous substances contained in the blood are possessed of a powerful affinity for water, and there is consequently much difficulty in expelling all moisture from them during the process of drying. Abundant experience has shown them that, in order to dry properly 100 grammes either of defibrinated blood, of serum, or of clot, it is necessary that it should remain for at least forty-eight hours continually exposed to heat in the drying apparatus, that the temperature should be about  $176^{\circ}$  F., and that the albuminous matter should detach itself almost spontaneously from the capsule in a powdery state, and without having undergone any sensible change of colour; it is, moreover, essential that it should be weighed while hot, directly after its removal from the apparatus. It is difficult to decide positively whether it be the albumen or the other constituents of the blood which have so great a tendency to absorb water. Some experiments, however, would seem to show that this property belongs especially to the alkaline salts, to free soda (!),\* and to the water-extract.

The second point to be considered is the loss of watery particles which the blood undergoes when exposed to the air during its coagulation. The degree of this evaporation is in a direct ratio to the amount of surface exposed, the degree of temperature, and the state of moisture of the atmosphere. This source of error can only be avoided by keeping the blood in a vessel carefully closed.

A third point for consideration is the density of the blood or of the serum compared with its chemical composition. MM. Becquerel and Rodier found it impossible to construct a table which would exactly indicate the quantity of solid matter contained in a portion of defibrinated blood of any given density. The determination of the specific gravity of the serum, however, leads to clearer and more uniform results, although even these are often only approximate ones; yet, in many cases, the density of the serum expresses very exactly the relative quantities of water and of solid constituents. For example, when the solid matters of the serum are present in such proportions that the whole of the extractive matters, of the salts, and of the fats, form one-ninth of them, and the albumen the other eight-ninths, the information afforded by the specific gravity of the fluid is very accurate and constant. But, if albumen predominates, these relations change, and the numbers expressing the total weight of the solid matters correspond to lower densities. If, on the other hand, the extractive matters and salts are relatively in excess, and instead of forming but one-ninth part of the solid constituents, they form one-eighth or even one-seventh, then the number expressing the weight of the whole solids in the serum corresponds to a higher instead of a lower density. In some more rare cases, the fatty matters occurring in excess, interfere with this result, or even tend to lower the density. MM. Becquerel and Rodier make no reference to, and seem unacquainted with the similar experiments of Zimmermann and Polli.

In the fourth place, since the serum of the blood is mixed in different individuals with variable proportions of globules, it follows that in complete analyses of the blood, the numbers representing the solid materials contained in the serum have not an absolute value. In order, therefore, to form a correct idea of the composition of the serum in health and in disease, it is necessary to examine this liquid separately, and to analyze it after spontaneous coagulation has isolated the globules and fibrin.

The subject considered in the second head of their memoir, namely, the influence of venesection of the blood, we shall notice presently; we now proceed to their third head, treating of—

\* [It is needless to point out the error into which MM. Becquerel and Rodier have fallen in regarding free soda as a constituent of the blood. How could free soda escape the carbonic acid existing in blood?]

3. *The Physiological Characters of the Serum in Health*—In the following observations, the composition of the serum in health was estimated by analyzing it in nineteen individuals, eleven of whom were males, and eight females. The serum, after being dried, was washed with warm distilled water to remove the extractive matters and salts, and then digested in alcohol at 97° F. to remove the fatty matters. The serum in these cases varied in its relative quantity. It was usually of an orange-yellow colour, and of tolerable consistence. In all cases it was decidedly alkaline, sometimes limpid, but frequently turbid, either from the presence of globules or of albuminous fragments. Its specific gravity varied somewhat in the different cases: in the serum taken from nine of the men, the density varied from 1028.5 to 1027, the mean being 1027.7; in the eight females, it ranged from 1028.6 to 1026.6, the mean being 1027.4, and consequently almost the same as in males. The extremes of the solid residue of 1000 parts were 95.5 and 85.5.

4 The following table may be regarded as representing the composition of 1000 parts of normal serum:

Water	.	.	.	.	910
Pure albumen	.	.	.	.	80
Extractive matters and salts	.	.	.	.	8
Fatty matters	.	.	.	.	2
					<hr/>
					1000

5. The fatty matters were examined for them by Cahours, who reports upon them as follows:

"Seroline is always present, and apparently possessing constant properties, but in too minute a quantity to allow of its nature being accurately determined. The cholesterine is exactly similar to that obtained from biliary calculi. The saponified fat or animal soap is composed of oleate and margarate of soda. The phosphorized fat [see the Half-yearly Abstract, vol. i. p. 302], although generally exhibiting the same external characters, is yet a very complex substance; its reaction is faintly alkaline, and it contains chloride of sodium, a fatty principle partly saponified by soda, and a non-saponified fatty matter, which is partly dissolved when boiled in potash-ley, and leaves a brownish extractive matter. The potash-soap, when decomposed by an acid, yields oleic and margaric acids." Hence we must regard the existence of a really phosphorized fat in the blood as more than doubtful. The saponified fat is the most abundant of these fatty matters.

6. A full account of the former researches of Becquerel and Rodier is given in the Report on Animal Chemistry in our first volume, to which (or to the first volume of Simon) we must refer our readers. The results of their present researches tend to confirm the truth of their former statements. It has been objected to their analyses of healthy blood, that, from the high number of the corpuscles, they must have examined a case of plethora; this they strenuously deny.

7. Zimmermann has contributed to Heller's "*Archiv*" a series of memoirs on the serum, on the soluble salts of the blood, and on the relations of the salts in the blood and serum after venesection. These contributions extend over a space of upwards of eighty pages, and we must confine ourselves to a very brief notice of his most important conclusions.

1st. *On the variation in the amount of the water and serum.*—Zimmermann gives 68 and 112 as the limits of the solid residue yielded by 1000 parts of serum. To what extent the amount of water must increase, in order that endosmosis of serum in the coloured corpuscles, and exosmosis of hæmatin should occur, has not yet been accurately determined, although some rough experiments lead to the conclusion that it must be augmented by about two-thirds of its normal quantity. The ordinary causes of the serum assuming a reddish colour, are either blood-corpuscles swimming in it, or a little hæmatin liberated in consequence of the corpuscles being crushed.

2d. *On the colouring matters of the serum.*—On placing clear yellow serum in a position exposed to the sun's rays, he found that it became bleached and almost



as colourless as pure albumen. The intensely yellow fat that can frequently be removed from the serum by ether is similarly influenced by solar rays; it must be borne in mind, however, that the yellow tint of the serum is not dependent on the presence of this fat, for after its extraction the colour of the former is seldom at all paler. In his researches regarding the nature of the colouring matter of the serum (for which, by the way, he suggests the term *plasmaphæin*) he found that nitric acid did not produce a green tint, but rather gave the yellow a lighter shade.

3d. *On the precipitation of albumen in a molecular form.*—Nasse made the observation that serum diluted with water becomes turbid, and that if the degree of dilution is extreme, a small portion of the albumen is precipitated. Zimmermann, without being aware of Nasse's observation, arrived at similar results. The sediment consisted of extremely minute granules uniting together to form flocculi. They exhibited neither molecular nor infusorial motion, but if the sediment stood for more than 24 hours, infusoria appeared, and a more marked turbidity ensued. On the addition of a neutral salt, the albuminous sediment readily dissolves, but on the fresh addition of water, is again precipitated; acetic acid also freely dissolves it. In those cases in which the sediment was obtained from a specimen of serum which was turbid, and contained chyle-molecules and elementary corpuscles, these remained unaffected by nitrate of potash, and the fluid continued to present a whitish turbidity. The deposition of a small portion of the albumen in a molecular form, while the great bulk retains its soluble condition in these cases, seems to be dependent on the circumstance that the salts of the serum become so diluted by the addition of a large quantity of water that a portion of the albumen can no longer remain dissolved. This view is strengthened by the following experiments. Instead of using distilled water, he diluted the serum with solutions of various salts, the nitrate, tartrate, carbonate, and sulphate of potash, the chloride, iodide, cyanide, and ferrocyanide of potassium, the nitrate, sulphate, phosphate, muriate, carbonate, and tartrate of soda, and carbonate and phosphate of ammonia, and then found that the turbidity and separation of the albuminous deposit were prevented. The only salts that formed an exception to the above rule were tartarized antimony and acetate of potash.

That the dilution of the salts is not the sole cause of the deposit seems clear from the circumstance, that if we dilute specimens of the same serum with 3, 4, 5, 6 times their bulk of water, the precipitate caused by 4 volumes of water is not smaller than that produced by double the amount; and further, that all specimens of albumen do not (under apparently similar conditions) react alike, no precipitate sometimes occurring on the addition of water.

Zimmermann suggests that the addition of water may produce a chemical change in the constitution of the serum, giving rise to the development of an acid, which neutralizes a portion of the soda with which the albumen is associated.

4th. *On the means by which the albumen is retained in solution.*—Zimmermann is strongly opposed to the view maintained by Enderlin, that the albumen is retained in solution by phosphate of soda and chloride of sodium. It is not easy to understand how the small quantity of salts (about 7 parts) contained in 1000 parts of blood, can retain 80 of albumen in a state of solution, since a very much larger proportion of phosphate of soda is required to dissolve fibrin or coagulated albumen. Further, some of his analyses of the blood of plethoric persons yielded a much larger amount of carbonate of soda than could be formed from the tribasic phosphate. He thinks it most probable that the albumen is dissolved by soda, which exists in it in the same way as lime or magnesia.

5th. *On the soluble salts of the blood.*—From eight analyses he concludes that 1000 grammes of serum always contain a larger amount of soluble salts than an equal quantity of blood: the greatest difference in these cases being 1.38 grammes, and the least 0.1948 grammes. We might almost have concluded *a priori* that this result would have been obtained, since the fibrin and envelopes of the corpuscles contain little or no free salts.

As 1000 parts of serum contain more soluble salts than 1000 parts of blood, so also do they contain more alkaline chlorides, but less of the other salts—the alkaline sulphates, carbonates, and phosphates. As this is an original observation, we give the table of analyses on which Zimmermann founds his statement.

In 1000 grammes of blood there are contained			In 1000 grammes of serum there are contained		
Soluble salts.	Alk. chlor.	Other salts.	Soluble salts.	Alk. chlor.	Other salts.
1. 6.1120	3.8125	2.2995	7.4920	5.4290	2.0630
2. 6.0960	3.9715	2.1245	6.4550	4.5181	1.9372
3. 6.2723	4.1132	2.2591	7.4074	5.7543	1.6531
4. 5.8392	3.3160	2.5232	7.0420	5.4991	1.5411
5. 6.1785	4.3214	1.8571	6.8200	5.7559	1.0641
6. 6.7500	4.0834	2.6666	6.9448	5.2121	1.7327
7. 6.7383	4.0571	2.6512	7.4611	5.0844	2.3767
8. 6.4120	3.8856	2.5264	7.0301	5.4263	1.6038

From this table we see that the alkaline chlorides in 1000 grammes of serum exceed those in an equal quantity of blood, the greatest amount of difference being 1.6 grammes, and the least 0.5466 grammes. In 1000 parts of the blood indicated by (1) in the above table, he found, by Andral and Gavarret's method of analysis—

Water . . .	774.80
Solid residue . .	225.20
<hr/>	
Fibrin . . .	2.01
Residue of serum .	88.40
Blood-corpuscles .	133.79

The 1000 parts of blood consisted of

Moist fibrin . . .	6.03
Serum . . .	858.20
Blood-corpuscles .	133.79

We have found, however, that 1000 parts of the blood contain 6.1120 of soluble salts, of which 3.8125 were alkaline chlorides.

Moreover 1000 parts of the serum yield 103.1 of solid residue containing 7.4920 of soluble salts, of which 5.429 are alkaline chlorides.

Now assuming Andral and Gavarret's method of calculation to be correct, the 858.2 parts of serum in the 1000 of blood must have contained 6.4296 of soluble salts, of which there must be 4.6591 of alkaline chlorides, and 1.7705 of other salts.

But if all the salts are dissolved in the serum of the blood, then this must have been the quantity of salts contained in 1000 parts of blood; and as a direct analysis has already proved that it contains a smaller amount, it obviously follows that Andral and Gavarret's method leads to false results.

8. *On the Salts contained in the Blood.*—The readers of the preceding Reports on the Progress of Animal Chemistry (see vols. i., ii., iii.) are aware that much controversy has already arisen on this subject. The accuracy of the statements of Enselcher and Liebig, regarding the absence of alkaline carbonates in the blood, has been impugned by Marchand,\* Lehmann,† and Rose.‡

Marchand observes that, as the protein compounds of the blood contain sulphur and phosphorus, if they are reduced to an ash, and any carbonate of soda be likewise present, it must necessarily be decomposed, and sulphate and phosphate of soda formed. Supposing bibasic phosphate of soda to be contained in the blood, it would be impossible, with the presence of carbonate of soda, to detect the latter in the ash. It is scarcely necessary to observe that bibasic phosphate of soda, ignited with carbonate of soda, is converted into tribasic phosphate—a reaction, therefore, which renders it impossible to determine, from the ash, whether the salts  $2 \text{ Na O, H O, P O}_5$ , and  $\text{Na O, C O}_2$ , or the salt  $3 \text{ Na O, P O}_5$  be contained in the substance.

"I will finally observe," adds Marchand, "that the admission of the presence

\* Journ. für Prakt. Chemie, April, 1846; or Chemical Gazette, No. 87.

† Bericht über die Verhandlungen der Gesellschaft der Wissenschaften in Leipzig, pp. 96-100, as translated in No. 107 of the Chem. Gaz.

‡ The Chem. Gaz., No. 108.

of 3 Na O,  $\text{PO}_5$  in the blood absolutely requires that of carbonate of soda. It has been indisputably proved that 3 Na O,  $\text{PO}_5$  is converted, on exposure to a moist atmosphere containing carbonic acid, into 2 Na O, HO,  $\text{PO}_5$ , and Na O,  $\text{CO}_2$ . Just as firmly is the fact established that the blood contains several times its volume of free carbonic acid, and that we can remove this gas both from venous and arterial blood by mere pumping. The tribasic phosphate can scarcely exist in a liquid containing this gas in solution without being changed into bibasic phosphate and carbonate of soda; which latter must necessarily pass into bicarbonate of soda, as a very little time suffices to produce this change in a solution of 3 Na O,  $\text{PO}_5$  by the air of a room. If, therefore, only so much carbonate of soda is contained in the blood that its amount is but half that of the bibasic phosphate, the carbonate must disappear on the reduction to ash, and form 3 Na O,  $\text{PO}_5$ . If the amount of carbonate of soda is greater, this salt is the more surely formed, and, nevertheless, the carbonate will entirely disappear, owing to the amount of sulphur and phosphorus in the protein compounds. To prove the presence or absence of the alkaline carbonates in the blood, we must examine it in its natural state. Liebig has lately made some experiments (see his *Annalen*, vol. lvii.), which confirm those of Enderlin. He arrived at the result that no alkaline carbonates are contained in the blood, and that the alkaline reaction is due to the phosphate of soda. Since free carbonic acid exists in the blood, this phosphate must necessarily be 2 Na O, HO,  $\text{PO}_5$ ; and how is it possible that 3 Na O,  $\text{PO}_5$  can be formed on the reduction to ash, in the absence of carbonate of soda?

"It does not follow, as Liebig supposes, that because hydrochloric acid produces no perceptible disengagement of carbonic acid from a liquid, that this contains no carbonates, since the eliminated carbonic acid may remain dissolved in the fluid, and the more so if it contain a substance in solution which has a tendency to absorb it."

After proving, by a series of experiments, that, on the addition of hydrochloric acid to an aqueous solution of carbonate of soda, the greater part or all (if the solution be weaker than .318 gramme of carbonate of soda to 100 cubic centimeters of water), of the carbonic acid gas will be retained in solution, he proceeds to add that if bibasic phosphate of soda (2 Na O, HO,  $\text{PO}_5$ ) be also present, the evolution of gas will be more difficult to perceive, as this salt has a very great tendency to absorb carbonic acid. Marchand concludes the paper with the account of an experiment performed three times with the same result, directly proving that carbonates do occur in the blood.

Lehmann has shown, from a series of ten experiments with the blood, that 1000 grammes contain, on an average, 0.132 of free, and 0.6759 of combined carbonic acid: the extremes in the former case being 0.096 and 0.204, and in the latter 0.581 and 0.7653. These extremes are yielded by the same two cases, the minimum 0.096 occurring in the same case with the maximum 0.7653, and the minimum 0.5810 with the maximum 0.204. Hence it would seem that the whole amount of carbonic acid (free and combined) is tolerably constant.

Calculated by volume, 1000 cubic centim. of well-beaten and fresh ox-blood lose about 70 cubic centim. of carbonic acid by mechanical means, and 360 cubic centim. when acid is used. One hundred grammes of blood contain .0676 of combined carbonic acid, and if this is in combination with soda, 0.1628 of neutral carbonate of soda; and since, according to Lehmann, beaten ox-blood yields 21.5 per cent. of solids, which contain 3.58 per cent. of ash, of which 86 per cent. are soluble, 100 grammes of these soluble salts must contain 24.364 of carbonate of soda.

To determine, in a direct manner, the quantity of carbonic acid contained in the blood, the blood was mixed with an equal volume of water, and the whole of its constituents coagulated by heat. The expressed liquid was then evaporated, and repeatedly filtered from the flakes which separated. The residue was incinerated in a platina crucible, at the lowest possible heat, until it was semifluid in the hottest part of the crucible. The mass which still contained carbon was digested with distilled water, and the carbon with the insoluble salts placed upon a weighed filter, which was subsequently burned to determine the amount of insoluble salts. The soluble salts, analyzed in the ordinary manner, yielded—



	1	2	3
Sulphate of soda	4.100	3.630	4.382
Phosphate of soda ( $3 \text{ Na O, PO}_3$ )	3.722	3.688	3.708
Carbonate of soda	15.830	18.052	16.626
Alkaline chlorides	75.481	73.945	75.030

In one experiment, with Fresenius's apparatus, 17.034 per cent. of carbonate of soda were found, which agrees very well with the above analysis; in a second, 18.771 were obtained.

Rose's paper is chiefly devoted to a new and improved method of analyzing the ashes of organic bodies. His conclusions regarding the ashes of the blood are entirely opposed to those of Enderlin, and correspond with those of Marchand and Lehmann.

9. *On the Effects of Venesection on the Blood*.—On this subject we may refer our readers to the following memoirs: (1) Polli "On the Coagulation and Buffy Coat of the Blood;" translated into German from the Italian. 1845. (2) Remak "On the Formation and Reproduction of Blood, and on the Importance of the Buffy Coat;" in his *Untersuchungen*, p. 98. (3) Zimmermann "On the Dynamics of Bloodletting;" in Roser u. Wunderlich's *Arch.* 1845. (4) Zimmermann "On the Alteration in the Amount and Relations of the Salts in the blood and Serum during Venesection;" in Heller's *Archiv*, 1846, p. 522; and (5), the second division of the recent memoir of Becquerel and Rodier.

10. *On the Presence of Sugar in Healthy Blood*.—While making a course of experiments on the power possessed by various of the animal solids and fluids to convert the amylaceous principles of food into dextrose, and finally into grape-sugar or glucose. Magendie\* ascertained that this transforming property was exhibited by the blood. He found that if 5 parts of starch, dissolved in 100 of water, were mixed with 200 parts of blood, the transformation was complete at the expiration of about four hours, not a trace of starch being detectible in the liquid, when deprived of its fibrin, globules, and albumen, while the presence of dextrose and glucose was perfectly evident, and both substances could be easily extracted.

The next point was to ascertain whether the blood, while circulating in the living animal, possesses the same action on starch. In order to determine this, he injected a certain quantity of starch-paste into the jugular vein of a rabbit, which had been kept fasting for three days. The blood of the animal was examined previous to the injection, and presented not a trace of sugar. It was examined again, immediately after, and not a trace of the injected starch could be detected by iodine, but in place of it there was certain evidence of the existence of sugar. The blood was now analyzed from hour to hour, and the quantity of grape-sugar was found to increase progressively for about five hours; after which it gradually diminished, and altogether disappeared at the end of seven hours after the injection of the starch.

The introduction of starch into the blood by means of injection being, however, an unnatural proceeding, it became important to ascertain whether, taken into the circulation during the ordinary process of digestion, starch undergoes conversion into sugar. To determine this point, a dog was fed for several days exclusively on cooked potatoes, mixed with a small quantity of lard. The blood was then found to contain a notable quantity of sugar of grapes, and a quantity of another principle soluble in water, insoluble in alcohol, and presenting the other characters of dextrose. The urine of this dog, however, contained no sugar; a point of importance in relation to the etiology of diabetes, as showing that sugar may exist in the blood without being found in the urine.

He has not yet made the experiment on man: but he considers it tolerably certain that, during the digestion of amylaceous principles of food, sugar will be naturally present in human blood. There is reason, therefore, to suppose that, although found in the blood of diabetic patients, it may also occur in the blood of perfectly healthy persons, as a natural consequence of the digestion and absorption of starch.

Magendie seems perfectly ignorant of the experiments of Dr. R. D. Thompson† (published more than two years ago), which showed, beyond all doubt, that when

\* *Comptes Rendus*, 27 Juillet, 1846.

† *Phil. Mag.*, May, 1845.

starch is digested in considerable quantity by animals, it passes into the condition of soluble starch, or dextrine and sugar, and being absorbed in the latter form into the blood, can be detected in that fluid during the period of digestion.

11. There are many other memoirs which deserve an honourable mention, in connection with the healthy blood and the process of respiration. Amongst these we may enumerate—

1st. Marchand\* on the colour of the blood.

2d. Taddeit† on the state in which iron exists in the blood.

3d. Schmidt‡ on the specific gravity of albumen, fibrin, and blood-corpuscles, and on the means of determining the composition of the blood from the specific gravity.

4th. Eichholz§ on the importance of fibrin.

5th. Harless|| on the influence of gases on the form of the blood-corpuscles of *Rana temporaria*.

6th. Mulder¶ on the manner in which the oxygen of the atmosphere is taken up by the blood in the process of respiration.

7th. The portion on respiration, in the new edition of Liebig's "Animal Chemistry."

8th. Löwenberg's\*\* report on the most recent experimental investigations in relation to the chemistry of respiration.

### § III.—On the Blood in Disease.

#### HYPERINOSIS.

12. *The Phlegmasiæ*.—Becquerel and Rodier have analyzed the blood in 38 cases of *phlegmasiæ*: 27 patients were bled but once, 9 were bled twice, and 2 three times; so that there were 38 first bleedings, 11 second bleedings, and 2 third ones—making, in all, 51. Of these 38 cases, 7 were cases of acute bronchitis, 11 of pleuro-pneumonia, 6 of pleuritis, 9 of acute rheumatism, 2 of erysipelas of the face, 2 of peritonitis, and 1 of angina tonsillaris; 24 of these occurred in males, and 14 in females. At the first bleeding the density of the serum was generally found lowered, though less regularly so than in typhus. As a general rule, it was only slightly diminished when the affection was slight and the bleeding practised early; whilst in cases where the affection was more severe, and the patients already greatly debilitated, the density was considerably diminished. In quantity the serum was tolerably abundant, it almost always separated perfectly from the clot, and was limpid, but sometimes cloudy. On analysis there was found to be a diminution in the amount of solid constituents, corresponding to the diminution of density. This diminution was entirely at the expense of the albumen, for the fatty and extractive principles, and the salts, were in a larger proportion than usual.

At the second bleeding the density of the serum was still further lowered. In quantity it was increased, and it was clearer and more limpid. In the two patients who were bled a third time there was observed a still further diminution in the proportion of solid constituents.

Without entering into the particulars of the analyses of the serum or blood in the individual *phlegmasiæ*, we may sum up the results as follows:

Besides the increase of fibrin, which has been repeatedly before observed, there is an almost constant tendency, on the part of the solid matter of the serum, especially of the albumen, to become diminished, and to entail as a consequence a lower specific gravity of the fluid than natural. At the same time there is very frequently an increase in the quantity of extractive matters and fatty principles. Whether these modifications in the serum are dependent on the lowness of the diet, or whether they are consequent on the disease, and on the disturbance of

\* Journ. für Prakt. Chem., vol. 37, p. 273

† Annali di Chimica applicata alla Medicina, Aprile, 1846.

‡ Liebig u. Wöhler's Annalen, Feb., 1847.

§ Rust's Magazin, Jan., 1847

¶ Monographie über den Einfluss, &c., von Dr. E. Harless. Erlangen, 1846.

|| Holländische Beiträge, &c. Erstes Heft, 1846.

\*\* Beiträge zur experimentellen Pathologie und Physiologie, herausgegeben von Dr. L. Traube. Berlin, 1846.

effects in the system—the increased heat of the body, whereby the secretions generally, and especially that of the urine, being diminished, a larger quantity of water than usual is retained in the system—or, finally, whether they depend on the transformation of a portion of albumen into fibrin, are questions which cannot yet be answered. MM. Becquerel and Rodier regard the low specific gravity of the serum as one of the causes of the formation of the buffy coat in inflammatory affections.

13. *Phthisis Tuberculosis*.—Becquerel and Rodier examined the serum in 16 phthisical cases, but their researches have added little or nothing to our knowledge of the peculiarities of the blood in this disease. The serum is modified in its composition according to the general condition of the patient, and the complications which may be engrafted on the original disease. When an anæmic condition is developed, or when abundant hæmoptysis occurs, the solid constituents of the serum tend to diminish in quantity. The proportion of albumen is decidedly reduced, whilst that of extractive matters, fatty principles, and salts is increased; so that it appears that the composition of the blood in pulmonary phthisis is very similar to that presented in the different phlegmasiæ.

14. *Puerperal Fever*.—The condition of the blood in this disease has been made the subject of an inaugural dissertation by M. Hersent.\* The following are the conclusions at which he has arrived:

1st. The amount of water is very much increased; there is from the first a considerable diminution of blood-corpuscles; and, finally, there is a great diminution in the amount of albumen.

2d. The violence of the puerperal affection is proportional to the degree of alteration of the blood.

3d. The fibrin is usually not below, and sometimes above, the normal standard, and hence the blood generally coagulates pretty firmly.

4th. The alteration in the blood probably precedes the development of the disease.

#### HYPINOSIS.

15. *The serum of the blood in typhoid fever* has been examined by Becquerel and Rodier. The patients were 17 in number, viz., 14 men and 3 women; and altogether, there were 17 first, 6 second, and 2 third bleedings. We shall content ourselves with quoting their conclusions. In regard to its physical properties and chemical composition, the serum of blood first drawn about the commencement of a slight attack of typhus presents conditions very little different from those of health; it is more common, however, to find that, either from the influence of low diet, or from the effect of the disease, the proportion of water is increased, whilst that of its solid constituents, and especially of its albumen, is diminished. When a second bleeding is practised, it is found that, owing to the influence of the first abstraction, to the progress of the disease, or to the effect of diet, or probably to all these three causes combined, the serum has become more abundant and more aqueous, the quantity of solid constituents, and especially of albumen, having diminished. Similar modifications are found to have taken place when the bleeding is practised a third time.

16. *The serum in simple continued fever* was examined by the same chemists in seven cases, and was found scarcely to differ from normal serum.

17. *Blood in Rubéola*.—Three analyses of the blood in two cases of rubéola are given by Becquerel and Rodier. They so closely approximate to those of Andral and Gavarret, quoted in Simon's "Animal Chemistry," that it is unnecessary to quote them.

#### SPANÆMIA.

18. *Carcinoma*.—Heller's "Pathological Chemistry of Cancer" must be regarded as one of the most important memoirs falling within the scope of the present Report. His conclusions are based on the observation of 10 cases, and the analyses of the blood are in perfect accordance with the few previously on record.

On instituting a *microscopical examination* of the blood, it was seen—

\* Gaz. Méd. de Paris, 1846, No. 57.



α. That the corpuscles exhibited a great difference of size, some being below the average size, while there were many of three times the ordinary magnitude. The smaller ones were usually indented, granular, or festooned, while the larger ones were always smooth. This variety in the size of the corpuscles has been also noticed in purulent blood, and must, therefore, not be regarded as peculiar to the cancerous dyscrasia, although always present there.

β. On adapting the same mode of investigation as that which he pursued in the search for pus in blood (see vol. iii.), Heller found peculiar cells, resembling in their form and properties the cells of cancer, for which he first mistook them. He afterwards discovered they were the colourless corpuscles acted on by the fluid.

γ. A third microscopic peculiarity consists in the presence of peculiar glistening particles (probably fatty particles), presenting more or less perfect indications of crystallization, and which are generally most clearly seen on partially darkening the field of the microscope. Seen by transmitted light, they are partly colourless and glistening, and partly of a bluish tint.

These glistening particles may be generally observed, even with the naked eye, after coagulation, appearing either as a sparkling film on the clot, or lying in isolated specks on it, or, finally, as swimming in the serum, to which they communicate a beautiful glistening appearance on gently shaking the fluid.

The chemical analyses yielded the following results:

		Clot	Serum.	Water.	Solid residue.	Fibrin.	Blood-corpuscles.	Residue of serum.
1	II	543.0	457.0	832.46	167.53	16.44	77.03	74.06
2	H	—	—	—	—	10.90	—	—
	V	474.7	525.3	864.00	136.00	3.30	56.90	75.80
3	H	—	—	852.60	147.40	5.42	61.08	80.97
	H*	580.0	780.0	859.58	140.42	4.42	58.00	78.00
4	H	—	—	—	—	13.42	—	—
	V	—	—	—	—	3.20	—	—
5	V	—	—	—	—	4.63	—	—
6	V	619.6	380.4	820.05	179.95	3.31	99.48	77.16
7	V	490.0	510.0	809.95	194.05	5.10	104.00	84.95
8	C	340.1	659.9	853.78	146.22	8.12	60.50	77.60
9	C	—	—	—	—	5.17	—	—
10	C	—	—	—	—	4.83	—	—

From the above table we draw the following conclusions:

α. The fibrin is absolutely and relatively increased, sometimes to a very great extent.

β. The albumen is about normal in quality.

γ. The blood-corpuscles are very much diminished, giving rise to—

δ. A considerable deficiency in the collective solid residue of the blood.

Hence it follows that, instead of regarding cancer as connected with a condition of *albuminosis*, we must refer it to the head of *fibrinosis*.

19. *Scrofula*.—We are indebted to Dr. Glover for the analyses of the blood of 11 males and 7 females in scrofula.

	MALES.					
	Water.	Solid residue.	Fibrin.	Blood-corpuscles.	Organic residue of serum.	Inorganic ditto.
1	816.40	183.60	4.30	100.00	73.90	5.40
2	803.44	196.56	4.00	102.37	84.43	5.76
3	790.00	210.00	3.50	119.50	80.40	6.60
4	798.00	202.00	3.00	99.30	94.70	5.00
5	804.86	195.14	1.30	103.64	83.20	7.00
6	776.13	223.87	1.44	133.02	83.32	6.09
7	784.59	215.41	3.72	132.10	73.19	6.50

\* In this instance the blood was passed by the rectum. In the other cases H signifies metrorrhagic blood, V blood obtained by venesection, and C, by cupping.

	Water.	Solid residue.	Fibrin.	Blood-corpuscles.	Organic residue of serum.	Inorganic ditto.
8	794.90	205.10	4.50	121.00	73.10	6.50
9	806.00	194.00	2.10	102.10	83.50	6.30
10	773.10	226.90	2.60	137.00	80.75	6.55
11	764.01	233.99	4.00	140.49	84.70	6.80
Mean	791.95	208.05	3.13	117.32	81.38	6.22

On comparing these results with Becquerel and Rodier's standard of male healthy blood (see vol. i. p. 302. of the Half-yearly Abstract), we are led to the conclusion that in males affected with serofida the blood-corpuscles are diminished in quantity, and in some cases remarkably so; while the solids of the serum are increased. This increase seems to bear chiefly on the albumen, the extractive matters not being increased to a great extent. The facts were, in most cases, also augmented.

## FEMALES.

	Water.	Solid residue.	Fibrin.	Blood-corpuscles.	Organic residue of serum.	Inorganic ditto.
12	785.40	214.60	3.30	110.00	94.06	7.24
13	824.20	175.80	4.70	102.50	61.10	6.50
14	781.94	218.06	3.51	120.95	86.12	7.48
15	794.20	205.80	4.50	109.52	85.18	6.60
16	807.49	192.51	3.30	119.79	63.20	5.82
17	783.70	216.30	2.20	126.50	81.20	6.40
18	819.34	180.66	2.73	88.63	82.43	6.87
Mean*	796.15	203.85	3.58	114.88	78.64	6.67

On comparing these analyses with Becquerel and Rodier's standard for healthy female blood, it appears that the blood-corpuscles are considerably diminished, while the fibrin is increased.

20. *Blood in Diseases of the Spinal Cord.*—Becquerel and Rodier have made twelve analyses of the blood of nine persons with diseases of the spinal cord. As our knowledge of the blood in these diseases is very deficient, we have deemed it advisable to give the results at which these chemists have arrived.

*a.* Two women, one aged 18 and the other 42, suffering from diseases of the vertebral column, which had given rise to deformity and complete paralysis, were bled. Both were much emaciated, and bed-ridden. In the woman aged 42, the venesection was ordered in consequence of an attack of bronchitis.

	Woman aged 18.	Woman aged 42.
Water	819.2	833.2
Solid constituents	180.8	166.8
Fibrin	2.7	5.0
Blood-corpuscles	94.0	78.0
Solid residue of serum	84.1	83.8

*β.* A man, aged 56. In the space of from thirty to forty days the disease of the spinal cord had run through all its stages, gained the upper extremities, and produced death from paralysis of the respiratory muscles. In 1000 parts of blood, taken five days before death, there were—

Water	783.5
Solid constituents	216.5
Fibrin	3.4
Blood-corpuscles	124.0
Solid residue of serum	89.1

On examination after death, there was no trace of softening, or other organic change, but merely congestion of the cord.

*γ.* Of five individuals affected with chronic disease of the spinal cord, three were bled once and two twice. The first two were completely paraplegic, and

\* In calculating the mean numbers we omit analysis 18, this case being complicated with goitre of four years' standing.

the venesection was prescribed as preparatory to other treatment. The third case was that of a woman with chronic inflammation, or softening of the cord. The fourth and fifth were cases of paraplegia from chronic myelitis.

In 1000 parts of blood there were—

	Man aged 26.	Man aged 45.	Woman aged 40.	Man aged 33.		Woman aged 46.	
				1 V. S.	2 V. S.	1 V. S.	2 V. S.
Water . . . . .	826.5	804.4	799.5	789.3	809.6	816.4	852.8
Solid constituents . . . .	173.5	195.6	200.5	210.7	190.4	183.6	147.2
Fibrin . . . . .	5.5	5.5	3.8	2.2	2.4	3.0	2.6
Blood-corpuscles . . . .	78.2	89.2	111.0	129.3	108.6	110.6	75.6
Solid residue of serum . .	90.3	104.4	85.7	79.2	85.4	70.4	69.0

8. The ninth and last case was that of a man, aged 36 years, who was bled twice in the space of forty-eight hours, for two violent attacks of painful spasmodic contractions of the muscles of the lower extremities.

In 1000 parts of blood there were contained—

	1 V. S.	2 V. S.
Water . . . . .	797.3	824.2
Solid constituents . . . .	202.7	175.8
Fibrin . . . . .	4.1	4.1
Blood-corpuscles . . . .	114.3	93.1
Solid residue of serum . .	84.3	78.7

From these analyses MM. Becquerel and Rodier draw the following conclusions:

When affections of the spinal cord are accompanied by paraplegia, there is usually a marked diminution in the quantity of blood-corpuscles—a diminution which is the greater the more advanced the disease has become, and the more debilitated the patient is. In some of the above cases the quantity of blood-corpuscles was even less than is found in many cases of chlorosis; nevertheless, there existed no bruit in the carotids. [The authors seem entirely ignorant that English pathologists have established that the bruit is venous, and not arterial.] In the blood of the second bleedings the diminution was still greater, and as the diet of the patients was not limited, this must be attributed to the progress of the disease. The quantity of fibrin was sometimes normal; at others, in consequence of a transient phlegmasia, it was above its healthy average, and sometimes this augmentation took place without any apparent cause. The serum had generally a high specific gravity.

#### HETEROCHYMEUSIS.

21. *The blood in Bright's Disease* has been examined by Becquerel and Rodier in three cases, all males. In A. (aged 19) there was severe bronchitis, unaccompanied by much febrile disturbance. In B. (aged 22) there was no complication; he was bled twice within an interval of two days. In C. (aged 39) there was bronchitis and considerable fever; he was bled twice at the commencement of the attack, a day intervening between each venesection, and a third time about a month afterwards. When bled the third time he was much better, and his urine contained less albumen, yet the return of fever threatened a relapse. In all these cases there was considerable anasarca.

The following are the results of the analyses:

	A	B		C		
		1 V. S.	2 V. S.	1 V. S.	2 V. S.	3 V. S.
Water . . . . .	832.6	801.9	838.7	Not analyzed.	811.4	807.3
Solid constituents . . . .	167.4	198.1	161.3		188.6	192.7
Fibrin . . . . .	6.2	2.7	2.8		4.3	5.2
Blood-corpuscles . . . .	99.8	129.0	97.1		128.8	123.1
Solid residue of serum . .	61.3	66.4	61.4		55.5	64.4
Specific gravity of serum . .	1019.0	1023.0	1022.0	1020.3	1020.3	1023.9
In 1000 parts of serum there were—						
Water . . . . .	931.5	926.0	932.1	926.6	935.9	926.1
Solid residue . . . . .	68.5	74.0	67.9	73.4	64.1	73.9



These facts, although few in number, tend to show—1st, the generally small proportion of corpuscles in the blood in this disease; 2dly, that the quantity of fibrin is about normal, except where an inflammatory affection complicates the original disease; and, 3dly, that there is a considerable diminution of the albumen; thus confirming the results of previous observers.

Two other analyses of the blood in this disease may be found in Remak's\* "*Diagnostische und Pathogenetische Untersuchungen*," confirmatory of the above conclusions.

No reference is made in these cases to the existence or amount of urea in the blood. La Cava† has, however, recorded a case in which the blood in albuminuria abounded in urea. The specific gravity was only 1039.4; in its other physical relations it resembled normal blood. From 100 grammes of blood he obtained 130 milligrammes of nitrate of urea, or, in other words, from 1000 parts of blood he obtained 0.6841 of pure urea.

He likewise sought for indications of uric acid in the following manner. Dried blood, from which boiling alcohol had extracted everything that was soluble in that menstruum, was digested in a solution of borax, containing a little carbonate of soda. After twenty-four hours the solution was filtered, and a third part evaporated, and treated with hydrochloric acid. In case uric acid were present, it must have been contained in the precipitate that was then formed. This sediment was collected, washed in pure water, and treated with a concentrated solution of potash. On evaporating the potash-solution and cooling, crystals were formed, which La Cava regarded as urate of potash; but since they dissolve pretty freely in water, and on the addition of hydrochloric acid did not yield any distinct uric-acid crystals, the point must be regarded as not definitely settled.

22. *Diabetes*.—In a case of diabetes, in which sugar was very abundant in the urine, Bertozzi‡ obtained undoubted evidence of that constituent in the blood. It has likewise been detected by Müller.§

23. *Menstrual Fluid*.—Lauderer has recorded a case in which the menstrual fluid of a girl aged 18 years, who had been suffering from amenorrhœa, was of a dark-green colour, and had a very disagreeable acid odour. It had the bitter taste of bile, and contained a pigment closely allied to biliverdin.

#### BLOOD OF ANIMALS.

24. *Blood of Fowls*.—M. Henneberg (one of Liebig's pupils) has found that the blood of fowls contains silicate of soda or potash, a fact which explains the existence of the enormous quantity of silica occurring in their feathers.

#### § IV.—*The Lymph.*

25. An analysis of the lymph of a horse has been recently instituted by Geiger.¶ It was collected from a small crack beneath the fetlock of the hind foot, which emitted a large quantity of the fluid in an apparently normal state. It was of a pale yellow colour, of a sickly odour, slightly saline taste, neutral, and had a specific gravity of 1017. After standing for some time, a gelatinous, trembling coagulum was produced; the serum beneath it being perfectly clear, of a faint yellow colour, and, when examined under the microscope, containing only very few corpuscles.

On analysis, this lymph was found to contain—

Water . . . . .	983.7
Solid constituents . . . . .	16.3
Fibrin . . . . .	0.4
Albumen . . . . .	6.2
Extractive matter . . . . .	2.7
Fixed salts . . . . .	7.0
Fat and ammonia-salts . . . . .	traces.

The corpuscles contained in the fluid were none of them so large as blood-

\* Page 186.

† *Annali di Chimica applicata alla Medicina*, 1846, pp. 242-248.

‡ *Ibid.*, p. 38.

§ *Buchner's Rep.*, vol. 45, p. 272.

¶ *Archiv. f. Physiolog. Heilkunde*, 1846, pp. 391-96.

corpuscles; they had a granular appearance, had a well-defined outline, and many exhibited a decided nucleus. Some were perfectly round, others elliptical. There were no traces of fat-corpuscles or of red blood-corpuscles.

#### § V.—*The Fluids concerned in the Process of Digestion.*

26. *The Saliva.*—In a memoir on the action of the saliva in digestion, M. Bernard endeavours to reconcile the discrepant statements of Mialhe, Lassaigne, and other observers. As the memoir extends over thirty pages, and is, strictly speaking, perhaps rather of a physiological than a chemical character, we shall merely give the most important conclusions.

The following may be regarded as exhibiting the state of our knowledge on this subject before he instituted his experiments:

*a.* Mixed human saliva from the mouth rapidly transforms hydrated starch, with the aid of heat, into dextrine or glucose. (Leuchs.)

*β.* Mixed saliva of horses, obtained by making a section into the œsophagus, acts on starch in the same manner as human saliva. (Commission d'hygiène.)

*γ.* The parotid saliva of horses exercises no transforming influence on hydrated starch, under the influence of heat, nor, *a fortiori*, on raw starch. (Lassaigne.)

The experiments of Bernard were divided into three series.

By the first series he proves that the mixed saliva (in the case of the dog, the horse, and man) will convert starch into sugar; the temperature at which the experiments were made being about 100° F., the time being four hours with the dog's saliva, two hours with that of the horse, and thirty-five minutes with that of man, and equal quantities of saliva and solution of starch being employed.

Further, that in the case of the dog, *pure parotid saliva* and *pure submaxillary saliva*, either alone or mixed together, have no such transforming power.

By the second series it is proved, that the transforming force lies in the secretion of the buccal mucous membrane, and further, that on placing either the secretion or layers of the membrane in contact (under favourable circumstances) with starch or sugar, lactic acid was developed. In the living body, however, these changes cannot take place, in consequence of the impeding action of the acid gastric juice, so that, in point of fact, the chemical action of the saliva in digestion is little or nothing.

By the third series he proves, experimentally, the utility of the saliva in promoting the physico-digestive phenomena of mastication and deglutition, and at the same time its very slight importance in accomplishing physico-digestive transformations.

27. *Morbid Saliva.*—Lauderer\* has recorded a case in which the saliva of a person suffering from phthisis presented the following peculiarity. There were seen in it an immense number of minute fat-globules aggregated in a viscid mass. These globules, when isolated, exhibited the properties of oleic acid.

Herzog† has likewise published an analysis of morbid saliva.

28. *The Bile.*—We have had occasion, in some of our earlier Reports, to notice the researches of Dr. Kemp on the bile. He has recently instituted a determination of the quantity of sulphur contained in ox-bile.‡ The results of two ultimate analyses of dried bile, freed from mucus, pigment, and (as far as possible) salts, gave the following composition of the bilate of soda:

Carbon	.	.	.	59.90
Hydrogen	.	.	.	8.90
Nitrogen	.	.	.	3.40
Oxygen	.	.	.	17.63
Sulphur	.	.	.	3.10
Soda	.	.	.	6.53
Chloride of sodium	.	.	.	0.54

The equivalent number, therefore, for the soda salt is 5980, leading to the formula  $C_{48}H_{13}NO_{11}S + NaO$ .

These results accord pretty closely with those of Verdeil,§ who, under the di-

\* Heller's Archiv, 1846, p. 297.

† The Chemical Gazette, No. 99.

‡ Archiv der Pharmacie, vol. 96, p. 266.

§ Liebig u. Wöhler's Annalen, Sept. 1846.

reactions of Liebig, undertook the ultimate analysis of the crystallized bilate of soda, described by Plamer. The principal difficulty he encountered was in the perfect separation of chloride of sodium from the crystallized mass. This being effected, and the substance dried at  $212^{\circ}$ , he obtained—

	1.	2.	3.	Mean.
Carbon	59.84	59.77	60.07	59.87
Hydrogen	8.73	8.80	9.20	8.91
Nitrogen	4.11	4.33	—	4.22
Sulphur	3.78	3.89	—	3.83
Oxygen	16.43	16.32	—	16.18
Soda	7.09	6.89	—	6.99

which corresponds pretty closely with the formula  $C_{44}H_{40}NSO_3NaO$ . The pure acid contains, in 100 parts, C 64.33, H 9.59, N 4.53, S 4.11, and O 17.44.

29. Mulder\* has attempted to explain and account for the discrepancies between the views of Berzelius and Liebig, regarding the biliary secretion. He found that on analyzing bile which had been dried, dissolved in alcohol, decolorized by animal charcoal, and treated with ether, he obtained results differing essentially from those yielded by bile taken directly from the gall-bladder.

The dried bile, if kept for some days, was, for the most part, but not entirely precipitated by basic acetate of lead, while on similarly treating fresh bile, the greater part was not precipitated. When the portion which was not precipitated from fresh bile was freed from lead, and evaporated, it underwent a change, and became partially precipitable anew by the same salt of lead. This single fact explains what Berzelius states about his *bilin*, and clearly shows that fresh bile must not be looked upon as mere *choleate of soda*. "No one," says Mulder, "can deny the existence of *bilin* who has analyzed fresh bile in a manner by which this unmistakable body may be found. Under no conditions whatever does it form a combination with oxide of lead by means of basic acetate of lead, and hence it cannot be confounded with choleic acid: in fresh bile it forms the principal constituent." In bile which is not perfectly fresh, and which has been evaporated to dryness and treated in the above manner, we find *one principal constituent*. The composition of this body when purified from fatty acids, from free ferric and cholinic acids, and from other substances not thrown down by the salt of lead, is not such as has been usually supposed. All the analyses which Demarcay and Dumas, Kemp, Enderlin, Theyer and Schlosser have made of this body (to which Berzelius applies the name of *biliferric acid*) were made with it after exposure to a heat of only  $212^{\circ}$  F. On exposing the lead-salt to a temperature of  $266^{\circ}$  F., Mulder obtained, as the result of many analyses, the formula  $C_{52}H_{42}NO_{12}$ , ( $C=75.12$ ). In this brief paper Mulder makes no reference to the presence of sulphur.

30. *Colouring Matter of the Bile*.—Pelli,† one of the most energetic of the Italian physiological chemists, has recently published (in his own Journal), a memoir on the nature of the colouring matters of the blood and bile. The following are his principal conclusions:

1st. The yellow pigment of the bile and the red pigment of the blood, are one and the same substance in different stages of oxidation.

2d. The occasionally green and occasionally yellow colour of the bile contained in the faeces, the different tints in the skin in jaundice, and the change of colour observed in ecchymoses, are all dependent on different stages of oxidation of the same pigment.

3d. The red colouring matter of the blood is converted into yellow during its retrograde metamorphosis; the yellow pigment being in fact haematin that is no longer of service in the system, or has become excrementitious.

4th. The yellow pigment appears to be formed in part within the vascular system by a direct metamorphosis of the haematin of the corpuscles; taking place slowly in healthy persons, but rapidly in jaundiced ones. In both cases a corresponding quantity of it is discharged by the urine. The remainder of the yellow

\* Holländische Beiträge, &c., vol. 1, part 1, 1846.

† Annali di Chimica applicata alla Medicina, Gennajo, 1846.



pigment is formed in the liver from the blood or its colouring matter by a process of reduction.

31. There have appeared several other important memoirs on various points connected with the chemistry of the bile, regarding which, from our limited space, we can do little more than mention the mere names. Amongst these we must place—

1st. A monograph on the bile,\* by Gorup-Besanez, divided into three sections: the first devoted to the investigation of the spontaneous decomposition of ox-bile and the products resulting from it: the second, to the chemistry of human bile in health and disease (based on nearly 150 analyses); and to the solvent power of the bile in connection with the process of digestion; and the third, to the examination of the bile of the pig.

2d. Remarks on the constitution of the human bile. By George Kemp, M. D., Cantab.†

These remarks are written with the view of correcting a trifling misstatement of the author's views by Gorup-Besanez, and therefore would hardly require notice in this report, were it not for the fact that Dr. Kemp takes this opportunity of claiming for himself the original discovery (in the year 1842) of sulphur in the bile.

A reference to page 306 of Lehmann's "Lehrbuch der Physiologischen Chemie," the preface of which bears date June, 1841, will show that Dr. Kemp is mistaken with respect to his assumed priority of discovery.

3d. Method of separating the body produced by the joint actions of sulphuric acid and sugar on ox-bile (Pettenkofer's test). By George Kemp, M. D., Cantab.‡

4th. On nitric acid as a test for bile-pigment. By W. Heintz.§

The object of this paper is to show, that the fuming acid in a diluted state is a far better test than the strong colourless acid.

5th. On the action of nitric acid upon choloidic acid and cholesterine. By Professor J. Redtenbacher.||

6th. On the formation of fat in animals. By H. Meckel.¶

7th. On the supposed property of the bile to convert sugar into fat. By Dr. J. Schiel.\*\*

8th. On the assumed formation of fat from sugar by means of bile. By Dr. H. Meckel.††

9th. Remarks on the preceding memoir. By W. Heintz.‡‡

10th. On the changes that the bile undergoes in the presence of sugar. By C. Herzog.§§

In his treatise on the "Formation of Fat," Meckel thinks that he has proved experimentally, that the bile transforms sugar and other non-nitrogenous articles of food into fat. Schiel and Herzog describe certain experiments opposed to the above view. Meckel and Heintz, who subsequently worked at this subject together, prove that there was a fallacy in the earlier researches of Meckel, and that the substance assumed to be fat is merely a constituent of the bile capable of reacting on Pettenkofer's test, and probably slightly modified choleic acid.

11th. On the formation of gall-stones. By Bransom.||||

12th. On the bile of the boa anaconda. By Schliepper.¶¶

32. *The Gastric Juice*.—Lehmann\*\*\* has confirmed the statements of Pelouze and of Bernard and Barreswill, regarding the absence of free hydrochloric acid in the gastric juice, and has further indisputably proved the existence of free lactic acid

\* Untersuchungen über Galle. Ein Beitrag zur physiologischen und pathologischen Chemie von Med. Dr. E. Freyh. von Gorup-Besanez. Erlangen, 1846, pp. 70.

† The Chemical Gazette, No. 91. ‡ Ibid. No. 90. § Müller's Archiv, 1846, p. 399.

|| Liebig u. Wöhler's Annalen, vol. 57, p. 145, or Chem. Gaz., No. 90.

¶ De Genesi adipis in animalibus; Halis, 1845.

\*\* Liebig u. Wöhler's Annalen, April, 1846. †† Ibid., July, 1846.

‡‡ Ibid. §§ Archiv der Pharmacie, Aug. 1846.

|||| Heule u. Pfeufer's Zeitschrift für rationelle Medizin, 1846, vol. 4, Nos. 2 and 3.

¶¶ Liebig u. Wöhler's Annalen, Oct., 1846.

\*\*\* Bericht der Gesellschaft der Wissenschaften in Leipzig, pp. 100-105, or Chem. Gaz., No. 106.

in that secretion. To prevent any fallacy in the experiments, dogs were kept fasting for 12 or 16 hours, and then fed about a quarter of an hour before death with bones freed as much as possible from skin and fat. The gastric juice was almost perfectly clear, being scarcely opalescent. From 100 parts there were obtained 1.808 of solid matter, 0.125 of hydrochloric acid, and 98.067 of water. This hydrochloric acid is formed by the decomposing action of the lactic acid at a certain degree of concentration, even in the cold, upon certain chlorides, especially those of calcium and magnesium, but not those of potassium and sodium. To prove the presence of lactic acid itself with certainty, the gastric juice was concentrated *in vacuo* to one-twelfth of its volume, the residue mixed with alcohol of 0.85, the spirituous solutions from several stomachs evaporated to the consistence of a syrup, and the residue exhausted with absolute alcohol. The residue of this was exhausted with ether, and the ethereal extract mixed with water, to remove the fat, and filtered. On further concentration, more drops of oil separated from the filtrate, and the fluid still contained hydrochlorate of ammonia.

The liquid was partly saturated with lime, partly with magnesia, and the salts formed were purified by several re-crystallizations from alcohol and water. The magnesian salt gave results approximating very closely to the formula  $Mg O, \bar{L}a + 3 HO$ .

33. *On the Process of Digestion and Nutrition.*—Schmidt\* has published a long memoir on the nature of the digestive process, without, however, adducing any new facts. The memoirs of Boussingault,† Mialhe,‡ and Bouchardat and Sandras,§ may also be consulted with advantage.

#### § VI.—The Milk.

34. *Sugar in the Milk of Carnivora.*—In a former report we noticed the experiments of Dumas, tending to prove that the milk of carnivorous animals, fed exclusively on flesh, contains no sugar of milk. This subject has been recently investigated by Bensch,|| whose experiments show that Dumas's conclusion is incorrect, and that sugar is always present; but that in consequence of the mode of analysis pursued, it undergoes changes which render its crystallization impossible. The experiments were instituted on two large bitches which were placed on an exclusive flesh diet from the fourth day after their delivery.

a. The milk of the bitch (A), after being fed for 8 days on the fresh flesh of an old horse, not only yielded indications of sugar by Trommer's test, but also perfectly formed, transparent, colourless crystals of milk-sugar.

β. The milk of the same animal, after 12 days' flesh-diet (goat's-flesh containing very little fat being used from the ninth day), yielded tuft-like crystals of milk-sugar, which, dissolved in a little water, re-crystallized in rhombic tablets.

γ. For the succeeding 15 days the animal was fed on asses-flesh. The milk exhibited the same relations as in β.

δ. The milk of the bitch (B), after five days' flesh-diet, yielded indications of the presence of sugar by Trommer's test.

The milk in all these instances had an acid reaction, dependent according to Bensch, on the presence of acid phosphates of lime and magnesia.

When Haidlen's mode of analyzing milk was used, crystals of milk-sugar could not always be obtained, although Trommer's test showed the actual presence of that constituent. This non-occurrence of the crystals is, probably, occasioned by the milk-sugar becoming converted into grape-sugar by the prolonged action of the free (phosphoric) acid at a temperature of  $212^{\circ}$ .

\* Ueber das Wesen des Verdauungs-processes, Liebig u. Wöhler's Annalen, March, 1847.

† Expériences statiques sur la Digestion, in the Annales de Chimie et de Physique, vol. 18, p. 444; and Recherches sur le développement de la Substance minérale dans le système osseux du Porc; in vol. 16, p. 486, of the same periodical.

‡ Digestion et Assimilation des Matières albuminoïdes, in the Journal de Pharmacie et de Chimie, vol. 10, p. 161.

§ De la Digestion des Boissons alcoolique et de leur rôle dans la nutrition, in the Revue scientifique et industrielle, vol. 26, p. 159.

|| Liebig u. Wöhler's Annalen, Feb. 1847.

35. *Morbid Human Milk*.—Landerer\* mentions a case in which the peripheral mammary lobules of a pregnant woman secreted green milk; while from the central ducts the fluid was normal. He also says that he has seen a case in which red milk was secreted by a woman suffering from suppression of the menses.

#### § VII.—*Mucus and Pus*.

36. An analysis of the mucus of the human gall-bladder is recorded by Gorup-Besanez,† and one of a mucous fluid occurring in a large cyst, by Seherer.‡

Dr. Francis§ has the credit of being the first to detect the presence of sugar in the expectoration of patients affected with diabetes. He gives the details of his researches in two cases, in one of which an ounce of sputa contained about seven grains of sugar.

Three analyses of scrofulous pus have been performed by Dr. Glover.|| and are recorded in his treatise. "On comparing these analyses with those hitherto published of pus from other sources, it is difficult to draw any inference with regard to the difference between scrofulous and non-scrofulous pus; it will probably be found, however, on the whole, that the proportion of albumen is greater in the former."

Much information on the chemical and microscopical characters of mucus and pus may be found in Vogel's "Pathological Anatomy."

#### § VIII.—*The Urine*.

37. *Colouring Matters in the Urine*.—Heller¶ has continued his researches regarding uroxanthin, uroglaucin, and urrhodin (see Simon's "Animal Chemistry," vol. ii. p. 522). He finds that uroxanthin sometimes occurs in very large quantities, and as its detection is of considerable diagnostic value, we extract the following account of the best means to detect this urinary constituent.

"We first pour concentrated hydrochloric acid into a wide test-tube, till it stands about half an inch high; we then gradually add a few drops of the urine to be examined, stirring and continuing to add by drops, till the urine amounts in volume to about one-third of the acid. If there is a great augmentation of uroxanthin, there is developed (either at once or after standing for some time) a very beautiful and intense violet-blue colour. If the increase is very great, the fluid assumes a deep indigo or almost black tint, and after standing for a couple of hours deposits a dark blue powder. On the surface there is a carmine-red metallic, glistening film. Both the powder and the film consist of a mixture of uroglaucin (the blue pigment) and urrhodin (the red pigment). On collecting this compound pigment on a filter, and extracting it with cold ether, the urrhodin is taken up, and on boiling the residue with alcohol, a light blue solution is obtained, from which, after a time, beautiful, blue, microscopic tufts of crystals of uroglaucin separate."

It is difficult to obtain urrhodin in crystals; Heller has, however, succeeded in doing so, from a very highly concentrated alcoholic solution. The crystals had a black appearance, and only seemed of their deep-carmine red colour when seen in very thin layers. The fact that urrhodin may be obtained in a crystalline form is important, as characterizing its constant composition.

The following is the best method of separating uroglaucin and urrhodin from normal urine.

Place a few ounces of the morning urine in a cylindrical glass, and add sulphuric or hydrochloric acid till a well-marked rose-red tint appears. To develop the tint with the least amount of acid the mixture should be continuously stirred. After allowing it to stand for some time, during which the colour usually becomes darker, the acid must be all but saturated with ammonia or carbonate of ammonia, so that there is barely an acid reaction. After evaporating to dryness, the saline residue must be washed away with distilled water, and the remaining brown

\* Büchner's Repert., vol. 39, p. 367.

† Op. cit., p. 40.

‡ Liebig u. Wöhler's Annalen, vol. 57, p. 196. § London Med. Gazette, Feb. 12, 1847.

|| Op. cit., pp. 81-83.

¶ Heller's Archiv, &c. 1846, pp. 19 and 539.



powder must be washed till it no longer communicates a brown tint to water. On using the ether and alcohol, in the manner already indicated, to this powder, we obtain solutions of urrhodin and uroglaucin.

According to Heller there is an augmentation in the amount of uroxanthin in the following diseases:

1st, In diseases of the Kidney; 2d, in diseases of the Spinal Cord; 3d, in Dysentery; and, 4th, in Typhus.

Two cases of blue urine have been recently observed by Semmola.\* The patients were a man suffering from rheumatism, and a woman aged 60, with tabes lymphatica, and considerable disease of the lungs and bladder.

38. *On the Quantitative Determination of Urea in Urine altered by Disease*.—In our last Report we gave Ragsky's method for the determination of urea, and at the same time mentioned that the method of Heintz was almost identical with it. In pursuing his investigations, Heintz† finds that sugar does not influence his results; that in the analysis of albuminous urine, the albumen must be first separated, which is best accomplished by treating the urine with a few drops of sulphuric acid, and then adding alcohol; or by means of chloride of mercury. He shows that when blood is present, the error caused by it must be extremely minute, and that his process is applicable in the estimation of the urea in urine containing milk as well as bile.

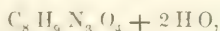
39. *On the Quantitative Determination of Uric Acid*.—The principal object of a memoir by the same author‡ on this subject is to ascertain the influence of the presence of various substances in the urine, on the accuracy of the results yielded by the ordinary process. On dissolving uric acid in a solution of phosphate of soda, he found that by the addition of hydrochloric acid he obtained results sufficiently accurate for ordinary purposes. Thus, on dissolving 4.8 grains of uric acid in two ounces and a half of a dilute solution of phosphate of soda, he recovered all but 0.095 of a grain, or about one-fiftieth of the whole.

The quantity of colouring matter attached to the uric acid compensates very nearly for the loss occasioned by washing the precipitate.

Grape-sugar has not the slightest influence on its determination. Neither albumen nor blood materially affects the result; but of course acetic or phosphoric acid must be used in these cases.

The differences occasioned by the presence of bile are considerably higher than in the preceding cases; but as it is extremely improbable that the urine should ever contain so large an amount of bile as Heintz used in his experiments, the results may still be regarded as very tolerably approximative.

40. *Creatine a Constituent of Urine*.—In the second volume of the English edition of Simon's "Animal Chemistry," pp. 127-130, the reader will find an account of a substance discovered almost simultaneously by Heintz and Pettenkofer. The substance there described as forming a crystalline compound with oxide of zinc is discovered by Heintz to be creatine. The pure creatine is obtained from the aqueous solution of its combination with chloride of zinc, by precipitating the zinc with hydrosulphate of ammonia; after having evaporated the filtered liquid as far as possible without a precipitate being formed in the boiling solution, absolute alcohol is added to it, when the creatine is immediately deposited in the form of small crystals, resembling those obtained in operating on the alcoholic solution of the aqueous extract of flesh. After these crystals had been washed in alcohol they were re-crystallized from water. Their elementary analyses led to the formula



which is the same as Liebig's formula for creatine. (See this Report, p. 289.)

41. *The Estimation of Ammonia in Urine* is determined by Dr. De Vry§ in the following manner. Having ascertained, while examining an abnormal ammoniacal urine, that sulphate of magnesia answered his purpose, he was led to try whether the test might not also be made applicable to healthy urine, in which the acid re-

\* Annali di Chimica applicata alla Medicina, Febrajo, 1846.

† Poggendorff's Annalen, vol. 68, p. 393.

‡ Muller's Archiv für Anat. und Physiologie, 1846, p. 383, or Chem. Gaz., No. 103.

§ Liebig u. Wöhler's Annalen, Sept., 1846.

action prevents the formation of the ammonia phosphate of magnesia. He ultimately found that, on mixing the fresh urine with bicarbonate of soda, filtering, and then adding the sulphate of magnesia, the characteristic precipitate appeared in the course of a few minutes.

42. *The Variations in the Alkaline and Earthy Phosphates*—The conclusions drawn from a very carefully conducted series of experiments on the urine in a state of health, by Dr. Bence Jones,\* are the following:

I. As regards variations in the phosphates.

The earthy phosphates, soon after food, were found to vary from 1.91 per 1000, urine of specific gravity 1033.2, to .97 per 1000, urine of specific gravity 1027.3.

Long after food they vary from .21 per 1000, urine of specific gravity 1028.2, to .75 per 1000, urine of specific gravity 1028.

The alkaline phosphates, long after food and soon after exercise, vary from 8.10 per 1000, urine of specific gravity 1028, to 6.50 per 1000, urine of specific gravity 1022.8.

Long after food the quantity varies from 6.67 per 1000, urine of specific gravity 1025.5, to 4.72 per 1000, urine of specific gravity 1033.2.

II. As to the causes of the variation.

(a) As regards food.

The earthy phosphates were not materially influenced by a diet of bread or of meat. They were in excess after either was taken; but on distilled water and meat alone, the excess was considerably below the average.

A long time after food the earthy phosphates were greatly diminished. The alkaline phosphates were present in greatest quantity when bread alone was taken for food; when meat alone was taken, the deficiency was more marked than the excess with bread alone was. There was the most marked difference when the bread-diet was compared with the meat-diet.

(b) As regards exercise.

Exercise produced no marked effect on the earthy phosphates. On the alkaline phosphates exercise caused an increase of nearly one-third the amount previously excreted. This difference is not so great as that between bread and meat diets; so that, probably, though exercise has some influence, the kind of diet has a greater influence.

III. As to the effect of medicinal substances on the earthy phosphates.

(a) As regards chloride of calcium.

Fifteen grains, taken in an ounce of distilled water, produced very little or no effect in two hours and a half; twenty-two grains, in rather more water, produced a very decided increase in two hours and a quarter; while thirty grains produced a still more marked increase in the same time, and the effect continued to be perceptible for ten hours.

(b) As regards sulphate of magnesia.

Thirty grains of sulphate of magnesia in an ounce and a half of water produced very little or no effect in two hours; in four hours and a quarter an increase was distinctly visible.

Forty grains in two ounces and a quarter produced a very slight effect in two hours and a quarter; in four hours and three quarters an increase was very distinct, and continued to be perceptible for nine hours.

(c) As regards calcined magnesia.

Forty-five grains produced no effect in two hours and three quarters; in five hours there was a marked increase; in seven hours and a half a still greater increase, which was very marked at the end of twelve hours. 3.08 grains produced no increase in two hours and a quarter; in four hours and three quarters the increase was very evident, and after eight hours and three quarters it was still very marked; and even after twenty-six hours it still increased the amount of earthy phosphates in the urine.

These last experiments give the explanation of the rapid increase of phosphatic calculi, and of the enormous quantities of earthy matters discharged when magnesia or lime-water has been taken in calculous affections. They show that these substances, having probably combined with different acids, pass off by the

\* Philosophical Transactions, 1845-6.

urine, and, when this latter is alkaline, react on the phosphate of soda, and thus increase considerably the amount of earthy phosphates in the deposit.

The result of these experiments is, that the amount of earthy phosphates precipitable by ammonia, depends chiefly on the amount of earthy matter taken into the body; and that the amount of alkaline phosphates is, also, most chiefly influenced by diet; yet that there is an additional cause constantly acting in the state of health, namely, the production of phosphoric acid by the changes in the tissues of the body.

The following are the general conclusions at which Dr. Bence Jones arrives, regarding the variations of the phosphates in disease:

1. That acute affections of the nervous substance, organic and functional, are the only diseases in which an excess of phosphatic salts appears in the urine. In acute inflammation of the brain the amount of phosphates seems to be proportional to the intensity of the inflammation. In some states of violent delirium the amount of phosphates may also be proportional to the delirium.

2d. That in a large class of functional diseases of the brain, of which delirium tremens offers the most marked example, the amount of phosphates is most remarkably diminished.

3d. That no chronic diseases whatever show any marked excess in the total quantity of phosphatic salts secreted. One case of mollities ossium formed the only exception.

With regard to alkaline urine, Dr. Bence Jones gives the following table, with the view of facilitating, in a diagnostic point of view, the recognition of—

*Alcalescence from local causes, and Alcalescence from general causes.*

Blue paper made red on drying.	Blue litmus paper not made red on drying.
Alcalescence constantly present.	Alcalescence variable, usually soon after food.
Always contains mucus in excess.	Rarely contains mucus in excess.
Prismatic crystals, always to be found by the microscope.	When first passed, generally contains only a granular deposit.

43. *On the Amount of Sulphur and Phosphorus excreted in an Unoxidized State.*—From a series of well-devised experiments on these subjects, Dr. Ronalds\* concludes that from three to five grains of sulphur pass off daily by the urine in some other combination than as sulphuric acid, and that these three to five grains amount to about one-fourth of the whole quantity of sulphur excreted by the kidneys. In what state the sulphur exists Dr. Ronalds has been hitherto unable to determine. He has ascertained, however, that the precipitates produced in urine by neutral and basic acetate of lead, after the separation of the sulphates by barytes, and the colouring matter obtained by Scherer (see Report on Chemistry, p. 277 of vol. iii. of this work) contain only traces of this constituent, and that it is almost entirely found in the liquid containing the urea, which remains on the separation of the precipitate by basic acetate of lead. As Dr. Ronalds has instituted comparatively few analyses with the view of determining the phosphorus, and is understood to be still prosecuting this subject, we shall defer any further notice of his investigations to our next Report.

44. *On Peculiar Conditions of the Albumen in Urine.*—Every practitioner who has had much experience in the examination of the urine, must have occasionally met with anomalous cases in which the action of the ordinary tests for albumen has indicated that an albuminous substance, differing in some respects from actual albumen, is present. The author of this Report has seen several of such cases during the past year. Sometimes the albumen (we retain the term as a matter of convenience) is only imperfectly coagulated on boiling, or coagulates in such minute floculi as to pass through the filter; in other cases it does not coagulate

\* Remarks on the Extractive Material of Urine and on the Secretion of Sulphur and Phosphorus by the Kidneys in an Unoxidized State. By Edmund Ronalds, M.D. Philosoph. Transactions, 1846.



on boiling, but merely becomes invested with a casein-like film. These peculiarities are apparently more or less dependent on the reaction of the urine. Thus Scherer found that albuminous urine, in which the urea had become converted into carbonate of ammonia, would not coagulate on the application of heat, until a few drops of acetic acid had been added to decompose the carbonate of ammonia, the urine in this case reacting like casein. Wundelich and Heller have recorded cases in which, on adding to albuminous urine one or more drops of nitric or hydrochloric acid, so as to produce a very slight turbidity, the fluid has not only lost the property of coagulating on being heated, but is absolutely rendered again transparent by that process.

Gorup-Besanez\* has lately published a detailed account of a case of Bright's disease, on which ramollissement of the brain supervened, in which an albuminous principle in the urine presented several anomalies.

On the 22d of July the urine was first examined. It was acid, and a considerable quantity of albumen was thrown down both on boiling and by the addition of nitric acid. On the 27th of November the albumen, as before, comported itself normally. On the 12th of December the urine was turbid, pale, had an unpleasant smell, and was neutral. The albumen separated very imperfectly on boiling; on a single drop of acetic acid being added previous to the boiling, perfect coagulation took place. Acetic acid alone (independently of heat) produced a mere turbidity. On the 11th of February the urine was pale, turbid, had a putrid odour, and an alkaline reaction. A portion, when boiled, became very slightly turbid; another portion, to which nitric acid was added, was strongly precipitated. Acetic acid, added to a portion, produced scarcely any turbidity, but on the subsequent addition of ferrocyanide of potassium, there was an abundant precipitate, showing that the urine contained a protein-compound. On the addition of a solution of potash to the urine, there was not the slightest turbidity, the earthy phosphates being already precipitated; but on the addition of acetic acid to this alkaline fluid, a considerable turbidity was observed, and on the application of heat there was a precipitate. On adding an excess of acetic acid, the precipitate dissolved, and on the further addition of ferrocyanide of potassium there was again an abundant precipitate. Hence, as might have been expected, the potash had converted the albumen into protein, which was then precipitated by the acetic acid.

It is worthy of remark that, before the addition of the potash, when the alkaline reaction of the urine was very faint, a single drop of acetic acid was sufficient to restore the coagulability on boiling; but the precipitate obtained in this manner by boiling, as well as that caused by nitric acid, dissolved instantaneously and completely in hydrochloric acid.

On the 20th of February the urine was neutral, and in all respects behaved the same as on the previous examination, except that the precipitates caused by heat and nitric acid were insoluble in hydrochloric acid. The last time the urine was examined was on the 28th of April. It was then neutral, and the albumen was perfectly separable by boiling, either with or without the addition of acetic acid. The author contents himself with stating these facts, and does not attempt an explanation of them.

45. *Fallacy of Moore's Test for Sugar in Urine.*—Dr. G. O. Rees has found that, on testing for sugar in albuminous urine, with liquor potassæ which had been kept in a white glass bottle, so much lead had been dissolved that, on boiling the mixture, a sulphuret of lead was formed with the sulphur of the albumen. In this manner a deep brown colour was produced, which might readily be, and indeed was, mistaken for an indication of the presence of sugar. Hydro-sulphuret of ammonia will afford a ready means of testing the liquor potassæ for this impurity.†

46. *On the Effect of Medicines on the Urine.*—We have already noticed the experiments of Dr. Genee Jones on the effects of chloride of calcium, sulphate of magnesia, and calcined magnesia, in increasing the earthy phosphates. Under this head we may also refer to Mayerhofer's‡ analyses of the urine after the prolonged

\* Heller's Archiv, 1846, pp. 16-16.

† London Med. Gazette, April 9, 1847.

‡ Physiologische, pathologisch-anatomische und pathologisch-chemische Wirkungen der Antimonial-Präparate auf den gesunden Menschlichen und thierischen Organismus. Von Carl J. C. Mayerhofer.

use of antimonial, and to Heller's\* researches on the urine after the administration of rhubarb and tincture of cantharides.

47. *Urine in Disease*.—Numerous analyses of the urine in different diseases have appeared since the publication of our last Report. The following is, we believe, a tolerably correct list of them.

*Serofula*.—Dr. Glover† has analyzed the urine in nine cases of serofula. The secretion does not seem to be much affected, except when there has been long-continued exhaustion.

*Typhus*.—Heller‡ has described and figured some remarkable fungi-sediments occurring in the urine during this disease.

*Bright's Disease*.—Analyses of the urine in this disease have been recently published by Remak,§ Falck|| (seven analyses), and Gorup-Besanez.¶

*Skin Diseases*.—The urine in *urticaria* has been analyzed by MacLagan,\*\* and the urine in *prurigo formicans* by Vogel.††

48. *The Liquor Amnii*.—Wöhler‡‡ has recently examined the liquor amnii of a woman, and found in it decided indications of urea.

49. *The Faeces*.—We must refer our readers to the new edition of Liebig's "Animal Chemistry," (pp. 143-154,) for the views of that chemist regarding the faeces. He shows that by the imperfect oxidation of albumen, casein, gelatine, and fibrin, all possible varieties of faecal odour may be produced.

#### THE COMPONENT PARTS OF THE ANIMAL BODY.

50. *The Effect of Prolonged Interment on the Bones*.—Some human bones having been discovered at Pantin, in the neighbourhood of Paris, M. Lassaigne§§ attempted to determine their date by comparing them with bones of some soldiers who had been buried in the immediate vicinity, in the year 1814.

	Unknown skeleton.	Bones of 1-14.
Water . . . . .	20.0	20.0
Organic matter . . . . .	11.0	15.0
Subphosphate of lime . . . . .	45.1	40.5
Carbonate of lime . . . . .	21.6	15.8
Sulphate of lime . . . . .	2.3	—
Traces of oxide of iron . . . . .	—	8.2

From these analyses it was concluded that the unknown bones were not of so remote a date as was at first supposed.

51. *Carious Bone* has been analyzed by Von Bibra,||| whose investigations show that in caries the osseous substance becomes destroyed, and is gradually removed, and that the saline portion disappears in a greater ratio than the cartilaginons. The whitish fluid matter impregnating the spongy tissue of the bone, and filling the cavities formed by the caries, is merely the detritus of the surrounding tissues, containing the same phosphate of lime and the same gelatinous matter mixed with fatty matter.

52. *Flesh*.—The recent investigations of Liebig,¶¶ regarding the fluid expressed from the flesh of animals, naturally find a place here. The following extracts from his letter to Gay-Lussac contain the most important of his discoveries:

"It has long been known that the flesh of animals recently killed exhibits a perceptibly acid reaction. This property has been attributed by Berzelius to the existence of lactic acid, without, however, this fact having hitherto been confirmed by satisfactory analytical results. Several chemists have admitted the presence of lactic acid in the urine, gastric juice, and in the milk; but they supported their conclusion merely upon reactions, which are not trustworthy. Even the opinion that lactic acid prevents the precipitation of oxide of copper by milk of lime, is founded upon an error. M. Strecker has recently shown that pure lactate of copper

\* Heller's Archiv, 1847, pp. 1814.

† Op. cit., pp. 126, 139.

‡ Heller's Archiv, 1846, p. 539.

§ Diagnostische und pathogenetische Untersuchungen, p. 186.

|| De Urina Albuminosa in Morbo Brightii Disquisitiones Auctore Carolo Philippo Falck. Marburgi-Cattorum, 1846.

¶ Heller's Archiv.

\*\* London and Edin. Month. Journ. of Med. Science. †† L'Institut, 26 Nov. 1845.

‡‡ Liebig u. Wöhler's Annalen.

§§ Journ. de Chimie Médicale.

||| Liebig u. Wöhler's Annalen.

¶¶ Comptes Rendus, Jan. 18 and Feb. 8, 1847.

is entirely decomposed by milk of lime, and not a trace of oxide of copper can be detected in the liquid. It is true that the pure lactate of lime dissolves a trace of oxide of copper, but a slight excess of lime-water precipitates it completely. My researches were made with a view to do away with all uncertainty with respect to the non-volatile organic acid, which constitutes a part of the animal organism.

"When the flesh of animals recently killed, and chopped into a fine pulp, is washed with cold water, a reddish liquid is obtained, which, when boiled, yields a coagulum of albumen, and is almost entirely decolorized. The clear scarcely-yellowish liquid obtained in this manner is decidedly acid, and has a very aromatic and agreeable taste of broth. When neutralized with barytic water, phosphate of baryta and phosphate of magnesia are precipitated; it becomes slightly alkaline, without any baryta remaining in the solution. After the separation of these precipitates, crystals of creatine, discovered by M. Chevreul in meat broth, may be obtained by suitable evaporation.

"On carrying the concentration further, acicular crystals are seen to form in the syrupy liquid, which, separated by filtration, and purified by re-crystallization, form white needles of a very brilliant nacreous lustre, and are very sparingly soluble in alcohol. The liquid separated from these crystals congeals to a thick mass, consisting of a syrupy mother-water and some very slender crystals in concentric groups, which are very soluble in alcohol, and even in a mixture of alcohol and ether. These two crystalline substances are potash or lime salts of two new acids containing nitrogen.

"The last mother-water contains lactate of potash. To extract the free lactic acid, I treat this mother-water with alcohol, and add to it some oxalic acid, likewise dissolved in alcohol, by which means I separate the potash as oxalate of potash. I then add ether as long as the liquid becomes turbid, by which I separate several other substances, and the alcoholic solution retains the lactic acid, capable of yielding with hydrated lime lactate of lime, which admits of obtaining the free lactic acid and other lactates. On submitting to analysis the lactate of lime and that of zinc prepared in this manner, I obtained for the first the formula  $C_6H_5O_5 + CaO + 4aq$ , and for the second  $C_6H_5O_5 + ZnO + 2aq$ . These results leave no doubt as to the nature of the non-volatile organic acid diffused through the animal organism; they explain the quick reaction of the muscles; and now that we know that there exists in so large a portion of the body of animals an acid liquid, which is only separated from an alkaline fluid (the blood and the lymph) by very thin membranes, we may, I think, explain several electrical phenomena observed by Matteucci and other physiologists upon the bodies of dead animals.\*

"By employing several hundred pounds of flesh, I obtained a sufficient quantity of creatine to be able to submit this body to a careful examination. Its physical properties have been described by M. Chevreul with such precision that I have nothing to add on this subject. From my experiments I am led to conclude that creatine forms part of the flesh in all classes of animals; hitherto I have ascertained its presence in beef, veal, mutton, pork, horse-flesh, hare, fowl, and pike. The beautiful discovery of that illustrious chemist becomes the more important, as there is no doubt that creatine acts an important part in the vital phenomena. It is at least certain that the flesh-broth cannot be replaced by gelatine, nor by any liquid obtained from any other part of the animal organism except the muscles. I have found creatine in bullock's heart, but not in the brain, liver, lungs, or kidneys. Creatine belongs, from its crystalline form, to the clinorhomboidal system; it frequently yields tolerably large limpid crystals, which are transparent and possess great lustre; at  $212^\circ$  they lose 12.18 per cent., of water, which corresponds to 2 atoms. From numerous analyses I have obtained for the composition of crystallized creatine the formula  $C_8N_3H_{11}O_6$ .

"Creatine is a neutral body, which dissolves in weak alkaline or acid liquids without experiencing any alteration; but its properties are changed in the presence of concentrated acids or of the caustic alkalies. Strong acids convert it into an organic base, which possesses some very remarkable properties; I have called it *creatinine*. It is formed in the presence of hydrochloric and sulphuric

\* The Italian physiologist, however, repudiates this explanation.



acids by the mere elimination of 4 atoms of water. On analysis it yielded the formula  $C^8 N^3 H^7 O_2$ .

"Creatinine is far more soluble in water and alcohol than creatine; its aqueous solution is caustic to the taste, like ammonia; it turns red litmus-paper blue, and combines with all the acids, forming salts of great beauty; its platinum salt is remarkable, from the size of the crystals and its beautiful golden colour. The formula above given expresses the quantity which combines with 1 equiv. of acid. The crystals of creatinine belong to the monoclinometric system; they are bulky, colourless, and possess great lustre.

"Creatine contains the elements of glycocoll (anhydrous sugar of gelatine), + 1 atom of ammonia; creatinine, those of caffeine + 1 atom of amide. I may add that 40 thin fowls yielded about 24 grms. of creatine; 56 lbs. of beef, 16 grms.: and 100 lbs. of horse-flesh, 36 grms.

"The extracts of the different kinds of flesh upon which I experimented leave, on evaporation to dryness and calcination, a white ash, which contains phosphates only. The liquids derived from beef and horse-flesh yield a mixture of alkaline phosphate (of potash and soda), which gives a yellow precipitate with salts of silver, and of pyrophosphate of soda and potash, which produce a white precipitate. The flesh of fowl yields pure pyrophosphates.

"The relation between the potash and soda salts in the liquids of the flesh and in the blood differs considerably; to 1 equiv. of potash the blood of an ox contains 12 to 13 equivs. of soda; this relation is reversed in the aqueous extract of the flesh of the same animal. The blood of the horse contains to 1 equiv. of potash 3.62 equivs. of soda: with the same quantity of soda the flesh of the same horse contains 6.9 equivs. of potash. These relations will lead to some important conclusions, if we bear in mind that the salts of potash predominate in the milk. If a soda salt (a phosphate of soda) is requisite for the constitution of the blood of many animals, it follows that the addition of chloride of sodium to the food of these animals is likewise necessary and indispensable for all those districts where the forage does not contain phosphate of soda, or soda salts, which is the case in many parts of Germany. It is easily conceived that the chloride of sodium, by reciprocal decomposition with phosphate of potash (which predominates in our cerealia), is able to furnish phosphate of soda and chloride of potassium, and this latter salt is never wanting in the liquids of the flesh.

"The existence of lactic acid in the fluids of the muscles of the Carnivora is a very singular fact. I have obtained a quantity of lactic acid from a wild fox, equal at least to that found in an ox; and from another fox, which had been confined and fed for 200 days upon meat only, I procured a considerable quantity.

"I have investigated the decomposition which creatine experiences under the influence of barytic water. By continual ebullition with barytic water, creatine is decomposed into urea and a new organic base; the urea is in its turn converted into ammonia and into carbonate [of baryta], which is deposited in minute but very distinct crystals. If we subtract the elements of urea from the composition of creatine, we obtain precisely the formula of the new base.

The formula for creatine is	.	.	$C^8 N^3 H^{11} O_6$
subtracting from which urea	.	.	$C^2 N^2 H^4 O_2$
leaves	.	.	$C^6 N H^7 O_4$

which is the formula found by the analysis of the base itself and its sulphates; it expresses the quantity which combines with 1 equiv. of oxide, and shows that this base is isomeric with the lactamide discovered by M. Pelouze.

"The new base is very soluble in water. When this solution is in a syrupy state, it deposits, on spontaneous evaporation, very brilliant large crystals, which possess the same crystalline form as the sulphate of magnesia: they are insoluble in alcohol and in ether. This base is very volatile; it sublimes at a temperature lower than that of boiling water. Owing to this property, which I was not able to foresee, a considerable loss of this precious substance occurred in its preparation.

"The composition of a new nitrogenous acid, the barytic salt of which I obtained after the separation of the creatine, is expressed by the formula  $C^{10} N^2 H^6$

O<sup>10</sup>; it contains therefore in 1 equiv. the same number of atoms of carbon as uric acid. I fear I shall not be able, from want of material, to analyse and study the other nitrogenous acid, which is found in the liquids of the flesh, and consequently in the broth. Both possess the taste of broth, and diffuse, upon heating their salts upon platinum, the odour of roast meat. The salt of potash, and all the soluble salts of the first acid, precipitate entirely salts of copper; a white precipitate, of the appearance of the hydrate of alumina, is obtained with nitrate of silver; it also precipitates salts of lead. All the salts of this acid are insoluble in alcohol, even in weak spirit. The soluble salts of the other acid have no action upon the salts of copper, silver, and lead; they dissolve in weak alcohol, from which they may be crystallized. The alkaline salts of these two acids yield after calcination a mixture of cyanide of potassium and cyanate of potash."

Heintz\* makes the following remarks regarding creatine: "From the experiments of M. Liebig it results, that of all the organs of the animal body it is only the muscles which yield creatine. Now, as I have proved its presence in the urine of man and animals, it appears placed beyond all doubt that this substance is formed in the muscles, that it is absorbed by the lymphatics or blood-vessels, and is finally secreted by the kidneys, like urea, &c. We may therefore conclude that creatine should henceforth be placed amongst the *excrementitious* substances; and consequently it is barely probable that it constitutes one of the most important alimentary principles of meat broth, as M. Liebig is inclined to think. Is it not rather one of the ultimate products of the chemical actions, the presence of which we have great reason to suspect in the act of muscular contraction?"

#### MORBID PRODUCTS.

53. *Vesical Calculi*.—Dr. Peter† has published an account of the urinary calculi in the Museum of Transylvania, U. S., of which 78 were from the human subject. This number is too small to admit of the deduction of any safe conclusions. In four cases the nucleus was a foreign body, in two being a small bean,‡ one a piece of decayed bone, and one a small film of animal matter, probably the remains of a clot of blood. Two calculi, taken from the same patient, consisted entirely of cystin.

Heller§ has recorded a case in which he detected urrhodin and uroglauclin in a calculus.

Bley|| has published two analyses of calculi.

54. *Calculi of the Lower Animals*.—Dr. Peters describes two calculi from the bladders of hogs, and one from a jackass. One of the calculi from the hogs appears to consist of a peculiar animal compound, containing a large proportion of carbon, and presenting many properties in common with uric oxide.

Heller¶ has also analysed a calculi from a hog; urinary concretions from the bladder of a cow have been analysed by Heerlein,\*\* and a calculus from an Arabian horse, by Launderer,†† who has likewise examined a urinary concretion taken from a pelican.

Lassaigne‡‡ has made analyses of two urinary concretions from different species of trionyx.

55. *Gall-stones*.—Some analyses of these concretions may be found in the memoir of Bramson, to which we have already referred.

56. *Various Concretions*.—A salivary concretion taken from a horse has been analysed by Lassaigne,§§ two lachrymal concretions from the human subject by Launderer,||| a pulmonary concretion found after death in a man, by Gorup-

\* Comptes rendus, March 22, 1847.

† The Western Lancet, Lexington, U. S. Vol. 5, No. 4.

‡ These two calculi, which originally weighed nine ounces, and now weigh seven, were taken from the bladder of the same patient. They were originally involved and cemented into one mass by a friable mass of fusible phosphates, which was broken off by repeated falls.

§ Heller's Archiv, 1846.

|| Archiv der Pharmacie, vol. 95, p. 250, and vol. 97, p. 171.

¶ Heller's Archiv, 1846, p. 48.

\*\* Archiv der Pharmacie, vol. 66, p. 261.

†† Buchner's Repert., vol. 62, pp. 53, 63.

‡‡ Revue Scientifique, Paris, Sept., 1846.

§§ Journ. de Chimie Méd. 1845, p. 523.

||| Buchner's Repert., 1846, vol. 42, p. 51.

Besanez,\* and one found in an ox, by Landerer,† and a vaginal concretion from a woman with a fistulous opening into the rectum, by Heller.‡

57. *Tubercle, Scrofulous Matter, Tumours, &c.*—On the subject of tubercular and scrofulous matter we must refer our readers to the first chapter of Dr. Glover's "Prize Essay on Scrofula," which contains pretty nearly all that is known on the subject. In fact, the only additional analyses, with which we are acquainted, are the following of Cozzi,§ on crude and fused tubercles:

	Crude tubercle.	Fused tubercle.
Cholesterin . . . . .	5.50	4.12
Oleate of soda . . . . .	8.41	6.53
Osmazome . . . . .	10.01	13.06
Chloride of sodium } . . . . .	1.30	1.38
Lactate of soda } . . . . .		
Caseous matter . . . . .	8.08	6.18
Chloride of sodium } . . . . .		
Tribasic sulphate of soda } . . . . .	2.27	1.72
Phosphate of soda } . . . . .		
Fibrin . . . . .	47.57	56.81
Fat . . . . .	0.45	0.34
Gelatigenous matter . . . . .	2.20	1.38
Matter unconvertible into gelatin . . . . .	13.87	7.90
Loss . . . . .	0.34	0.58

Von Bibra|| has published the following analyses of (1), fibroid of the cheek, (2), cancer of the lip, and (3), encephaloid of the eye.

	1	2	3
Protein substance . . . . .	18.3	9.00	11.221
Soluble albumen . . . . .	1.0	1.30	
Glutin . . . . .	3.7	0.83	3.990
Extractive matters . . . . .	2.5	1.25	3.350
Fat . . . . .	3.1	2.70	6.683
Water . . . . .	71.4	84.92	74.756
The ash in 100 parts } amounts to . . . . .	7.99	8.09	4.20

Existing in the following proportions:

Chloride of sodium . . . . .	1.4	10.13	8.0
Sulphate of soda . . . . .	4.2	2.04	12.2
Alkaline phosphates } . . . . .	71.8	63.83	35.4
Carbonate of soda } . . . . .			4.4
Earthy phosphates . . . . .	22.7	24.00	21.9
Iron . . . . .			18.1

In the same memoir the reader will meet with some interesting observations on fatty tumours.

An examination of the substance of goitre has been made by Oswald;¶ at a moderate heat it lost 80 per cent. of its weight. The dried residue contained—

Cholesterin . . . . .	40.0
Fat, soluble in ether . . . . .	30.0
Albumen and fibrin . . . . .	28.0
Phosphate of lime . . . . .	0.5

58. *Fluid Products of Disease.*—Landerer\*\* relates a case in which he detected sugar in the fluid obtained by tapping a diabetic patient with dropsy. The amount of fluid was about 25 pounds, and by applying the fermentation-test he found every pound contained 12 grains of sugar.

Bley†† has published an analysis of the fluid obtained by tapping a hydrocele.

\* Heller's Archiv, 1846, p. 16.

† Buchner, Loc. cit.

‡ Heller's Archiv, 1846, p. 48.

§ Annali di Chimica applicata alla Medicina, Aprile, 1846.

|| Roser u. Wunderlich's Archiv, 1845.

¶ Archiv der Pharmacie, vol. 96, p. 263.

\*\* Heller's Archiv, 1846, p. 295.

†† Archiv der Pharmacie, vol. 95, p. 251.



## V.

# REPORT ON THE PROGRESS OF FORENSIC MEDICINE.

BY WILLIAM AUGUSTUS GUY, M. B. CANTAB.

Fellow of the Royal College of Physicians, Professor of Forensic Medicine, King's College, Physician to King's College Hospital, &c.

### § I.—*Toxicology.*

1. *Poisoning by Sulphuric Acid.*—A very interesting and instructive case of poisoning by this agent will be found minutely detailed by Mr. George Tatham, of Wandsworth, accompanied by an account of the analysis of certain matters mixed with or corroded by the acid, and a judicious commentary on the legal bearings of the case, by Mr. Alfred Taylor, in the *Guy's Hospital Reports*.\* The case, which was tried at the Guildford assizes, August 1, 1846, before Mr. Justice Coltman, issued in the acquittal of the prisoner, Mary North, who was indicted for the murder of the deceased. Even a brief abstract of the trial would occupy too much space: the reader is, therefore, referred to the Reports themselves. The deceased, an infant, four months old, after being made to swallow a quantity, not exactly ascertained, of sulphuric acid, died from exhaustion and starvation in twenty-five days. The symptoms and daily progress of the case are minutely detailed; but with the exception of "a peculiar-looking, half-petechial and half-miliary eruption," appearing on the chest, arms, and abdomen on the eleventh day—an appearance by no means uncommon in cases of poisoning by the mineral acids—there was nothing which requires especial notice. The medical and chemical questions raised upon the trial, or involved in the inquiry, were the following:—1st. Within what period of time does concentrated oil of vitriol begin to produce symptoms or effects likely to be observed by any bystanders? 2d. Within what period of time will oil of vitriol, diluted with its bulk of water, begin to produce symptoms or effects likely to be observed by any bystander? 3d. Under what degree of dilution does concentrated sulphuric acid lose the property of carbonizing sugar, and other kinds of organic matter? The importance of these simple questions in their bearing on this particular case will be understood from the following brief statement of the leading facts, as deposed in evidence. Mrs. Barker, the mother of the deceased infant, put about a teaspoonful of aniseed and a lump of sugar into a cup, and then poured upon them about a teaspoonful and a half of hot water. Of this mixture she gave a teaspoonful to the child. Mrs. Barker then gave the child to the prisoner, whom she left in the kitchen while she returned to the parlour. In about five minutes from this time the prisoner called her, exclaiming, "Oh dear me, ma'am! what is the matter with the baby?" when she took the child from the prisoner, and observed that its eyes were strangely agitated, its mouth and tongue foaming and swollen; in fact, it was now suffering from the effects of the poison. The counsel for the defence endeavoured to show that the mother had by mistake given it oil of vitriol instead of aniseed. The well-ascertained fact that the effect of the concentrated or but slightly-diluted mineral acids is immediate, and the result of a few simple experiments on the blackening of sugar, on the addition of the acid in the manner detailed in the evidence, must have sufficed to prove that the poison was not administered accidentally by the mother, but that it must have been given to the child while it was under the care of the prisoner in the kitchen. The case, indeed, is one of those of which so many are on record, which go far to prove how unequal to these inquiries is that

\* New Series, vol. 4, p. 396.

tribunal which, by a very natural and pardonable generalization, has become the sole possessor of the confidence of Englishmen. It may well admit of doubt whether an ordinary jury is competent to try cases involving scientific evidence, and whether these questions of life and death ought not to be submitted to a more competent decision. The fallacies which led to the acquittal of the accused party in this case would not have weighed for an instant with men of ordinary scientific information. The administration of the poison by the mother could not have been entertained for an instant, even as a plausible suggestion, whatever might have been the ultimate decision as to the guilt of the accused. The whole case will be found worthy of careful perusal.

A second case of poisoning by strong sulphuric acid, which terminated in recovery, is recorded by Dr. Borgstedt. He was required to see a boy, aged 3 years, who had previously swallowed from two to three drachms of sulphuric acid. The father had already given him about one ounce of train oil. When Dr. Borgstedt arrived, he found that the acid had acted very powerfully on the skin of the exterior and interior of the mouth, as well as on the fauces. The child was lying on his back, motionless and speechless; his eyes deeply sunk and closed, and his breathing difficult and stertorous. A solution of carbonate of potassa and sugar in water was then poured down his throat, which was followed by vomiting, and after this had ceased, ʒss of oily emulsion, mixed with carbonate of magnesia, was given every half hour. In the evening of the same day strong febrile symptoms, accompanied with pain and tenderness over the stomach, occurred, all of which continued, in the same degree of severity, for three days, and required the frequent application of leeches. During this period also the mucous membrane of the mouth and tongue became detached, leaving deep eschars, which were smeared with a mixture of olive oil and yolk of egg. Milk was the only nourishment allowed. All the above symptoms abated towards the fourteenth day, up to which time the above-mentioned mixture was given at longer intervals. The motions also underwent a marked change, and indicated the progress to recovery. On the first day they were natural; from the second to the seventh they were hard, and like slaked lime; from this to the thirteenth they assumed an ash-gray colour, and on the fourteenth day they had resumed their normal characters.

Though cases of recovery from the effects of sulphuric acid are by no means uncommon, we cannot but consider this as a remarkable instance, as the dose of acid was comparatively large for so young a child.\*

A similar case is related by Dr. Letheby,† where a boy, 9 years of age, swallowed about ʒj of sulphuric acid. He suffered all the acute symptoms of gastritis, but finally recovered. The chief point of interest in the case was that during the first three days his urine was found to contain a large quantity of sulphuric acid, and during this time the quantity excreted was about 133 grains of monohydrated sulphuric acid, equivalent to one ounce and three quarters of the acid. sulph. dil. of the London Pharmacopœia. It would hence appear that the "duty of getting rid of the poison rested with the kidneys."

2. *Poisoning by Nitric Acid.*—A case of this kind is quoted from the German journals.‡ The quantity taken was about two ounces, and the time of day about three hours after dinner. It is only interesting on account of the time the man lived after swallowing this large dose of the acid, and for the existence of perforation of the stomach, which, notwithstanding the extremely corrosive nature of the poison, is of comparative rare occurrence. The man took the acid on the 19th of May, 1845, and died on the 10th of the following June, an interval of twenty-three days. On the 5th or 6th of June he experienced severe pains in the stomach, and vomited up a large piece of membrane, about a foot in diameter, and of a blackish colour, which probably formed the anterior wall of the stomach, as upon death that portion of its parietes was found absent.

3. *Poisoning by Oxalic Acid.*—A man, aged 60, swallowed a quantity of oxalic acid by mistake for Epsom salts. The acid taste of the salts soon warned him of his error, and he immediately excited vomiting by tickling his fauces. He then applied for medical aid, and took large quantities of albumen and lime water.

\* Casper's Wochenschrift, May 1846; and Med. Gaz., July 10, 1846.

† Lancet, Jan. 1847.

‡ Gaz. Méd., Aug. 8, 1846.

He was severely purged, and vomited frequently, and in about two hours afterwards symptoms of collapse came on, with coldness of the surface, weakness of pulse, &c. Under the use of hot tea and warmth to the skin all these symptoms passed off, leaving only "a sensation of burning in the throat and mouth, dysphagia, and acid eructations," which continued for about three days, succeeded by the symptoms of gastritis, which, however, soon yielded to appropriate treatment.\*

The dose of the poison was probably about half an ounce, which was sufficient to destroy life. The recovery, after so large a dose, was probably owing to the immediate occurrence of vomiting and the prompt application of remedies.

4. *Poisoning by the Alkaline Sulphurets. Acetate of Zinc as an Antidote.*—M. Caventou some time since proposed the use, in cases of poisoning by these substances, of acetate of lead, the administration of which was generally attended with success. But as this preparation itself is apt to cause injurious effects upon the system, M. Larocquet was led to search for a substitute which would be equally efficacious, but less poisonous. This he found in acetate of zinc, a salt which has the additional advantage of acting as an emetic. He has established its efficacy by several experiments on dogs, which will be found detailed in the paper referred to.

5. *Poisoning by Arsenious Acid. Cases.*—Dr. Letheby has communicated to the Pathological Society of London, a case of fatal poisoning by arsenic, which is chiefly interesting on account of the smallness of the dose taken, and the length of time that elapsed before the fatal symptoms were manifested.

Harriet T., aged 19, a robust and healthy girl, took, on Tuesday night, September 1st, 1846, about two ounces of fly-water, containing about  $2\frac{1}{2}$  grains of white arsenic. It rendered her restless during the night, producing watchfulness and slight pain in the stomach. Next morning she became sick and very thirsty, and the tenderness and pain in the stomach had increased. In the course of the day, the sickness became worse, she was repeatedly purged, her countenance looked pinched, and the extremities became cold. On Wednesday night she rallied and became more cheerful and slept comfortably, but was still thirsty. On Thursday morning she was worse, cold and drowsy, and she was sent to the London Hospital; her countenance was then pale and anxious, extremities cold and bedewed with a cold clammy sweat; pulse hardly perceptible, and she lay in a state of incipient coma. She then sank and died, in about 36 hours after the administration of the poison. The body was examined 21 hours after death, and from the appearances present, Dr. Letheby was led to conclude that death resulted purely from coma, as neither the symptoms during life, nor the state of the stomach after death, would allow him to attribute it to the effects of gastro-enteritis.

The brain was much congested and the several ventricles filled with half-coagulated blood. Lungs natural; the heart flabby and distended, with dark jelly-like blood, and hemorrhagic spots were seen on the endocardial membrane, especially where it covers the auriculo-ventricular valves. The abdominal and pelvic viscera were congested, and the stomach was pale and empty, and along the pylorus it had assumed a gamboge tint: arsenic was found in its tissues.†

This is a valuable addition to the comparatively small class of cases in which death is due solely to coma. Another case has recently occurred at the King's College Hospital, in which the poison was also taken in the form of fly-water, and after the complete evacuation of the stomach and temporary relief of all the symptoms, the child was seized with fatal coma. The case is also valuable on account of the smallness of the dose. The least fatal dose previously recorded was  $4\frac{1}{2}$  grains, and the subject of it was a child which died 6 hours after. There is, however, some reason to believe that as small a dose as four grains has already proved fatal to the adult.

An interesting case of poisoning by arsenic, in which none of the usual symptoms were observed, is reported by Mr. J. H. Houghton, surgeon to the Dudley Dispensary.‡ He was called to see Mrs. B., whom he found in a state of considerable mental excitement, but without any symptoms of cerebral affection.

\* Lancet, July, 1846.

† Lancet, Jan. 9, 1847.

‡ Gaz. Méd. de Paris, Oct. 1846.

§ Med. Times, Aug. 29, 1846.



She told him, very collectedly, that about three quarters of an hour previously she had taken half an ounce of arsenic, which she had that morning procured from a druggist in the town; and on inquiry it was found that she had been supplied with the poison. She was free from the ordinary symptoms of irritant poisoning. She had no thirst, pain, heat, or constriction of the throat or fauces, epigastric tenderness, vomiting, tormina, abdominal pain, or discharge from the bowels. Mr. Houghton immediately applied the stomach-pump. Albumen was then given freely, and afterwards doses of sulphate of zinc, which produced free vomiting, followed by the hydrated peroxide of iron—a tablespoonful every five or ten minutes. The patient was then put to bed, when she became composed, and almost free from pain, but had occasional gentle fits of vomiting, of a bilious character, this being the only symptom. Her pulse was rather feeble, and she soon seemed disposed to dose, in which state she continued for an hour and a half, when her bowels were moved with some tenesmus. In about an hour from this time she was found in a state of collapse, which was met by external stimulants, and small quantities of brandy and water and ammonia. (The iron was now discontinued and not resumed.)

From this state of depression the patient never properly rallied, but remained quiet, dozing from time to time, and died perfectly calm and collected, 13½ hours after taking the poison. Throughout her illness she presented no gastric symptom, except occasional mild vomiting; but whatever the stomach received was soon rejected; there was no tormina, tenesmus, or strangury; no cramp; and no cerebral or spinal symptom, to the last. Arsenic was found in large quantities in the matters rejected from the stomach, and in the fluid discharged by the stomach-pump.

An examination of the body took place fifty-seven hours after death; but the stomach only was examined, out of respect to the wishes of the relatives of the deceased.

At the pyloric end, on the posterior surface of the organ, there was a bright red patch, nearly the size of the palm of the hand: and on the posterior part of the stomach there were several streaks, about half an inch wide, of a black colour, and running from above downwards, slanting from the cardiac to the pyloric end of the stomach. The intervening mucous membrane had a natural appearance. On washing the black deposit away, which was effected with difficulty, the mucous membrane beneath was found to be considerably inflamed. This black deposit was left wherever the mucous membrane was inflamed, excepting on the red patch near the pylorus, and nowhere else. It was most copious also where the inflammation was most severe. There was no destruction of the mucous membrane in any part of the stomach; it contained about three quarters of a pint of darkish-green fluid, of the consistence of thickish soup. Small red vascular patches were seen on the small intestines, in various parts, as they lay *in situ*.

Mr Houghton invites attention to the fact, that with the exception of the "red patch" near the pylorus, every part of the mucous membrane which had been acted upon by the poison was thickly coated with iron, which it required considerable trouble to wash off with a sponge, as though the antidote had been attracted and firmly held by the poison, which, indeed, had been so completely combined with it as to be incapable of detection upon repeated careful experiments. In testing the contents and coats of the stomach for the poison, the resulting liquid was filtered through charcoal, by which, probably, a part of the arsenic was arrested. This seems to have been done in forgetfulness of the results obtained with animal charcoal as an antidote to the metallic poisons.

6. *Antidotes to Arsenious Acid. Magnesia.*—M. Bussy, from numerous observations made by himself, has been led to doubt the efficacy of animal charcoal in cases of poisoning by arsenious acid, and to propose in its place calcined magnesia. His results, which were communicated at a meeting of the Academy of Sciences, held May 20th, 1846, are as follows:

1st. That purified animal charcoal, which has been recently proposed as an antidote (Abstract, Vol. III. p. 294), cannot be advantageously employed for that end.

2d. That pure and feebly calcined magnesia can easily absorb arsenious acid in solution, and form with it a compound insoluble even in boiling water.

3d. That in a gelatinous state, it can absorb it still more rapidly.

4th. That animals, to whom he has given arsenic, are always saved when they have taken sufficient doses of magnesia.

5th. That this antidote possesses the advantage of being always ready at hand; that it neutralizes the poison easily and completely; that it may be given without inconvenience in a large dose; and that its general effects on the system agree with the indications of treatment to be fulfilled under the operation of the poison.

6th. That magnesia decomposes tartar emetic, the salts of copper, and corrosive sublimate, and that there is reason to believe that we shall be enabled to employ it to combat and lessen the effects of these poisonous substances, and of metallic salts in general.

7th. That the salts of the organic alkalies, strychnia, morphia, &c., are equally decomposed by magnesia, and that the employment of this substance in cases of poisoning by organic products, which owe their action to the presence of vegetable alkalies, might retard and render the absorption of the poison more difficult, but this remains to be verified by further experiments.\*

This remedy, in cases of poisoning by arsenic, was many years ago proposed by Mr. Hume, but it has been gradually laid aside on account of the apparent want of chemical action between the poison and the antidote, which may perhaps be explained by the circumstance of no other magnesia being in use except the dense variety which, according to Dr. Christison, exerts little or no action on the poison. Since these observations of M. Bussy were published, Dr. Christison has made a series of experiments to ascertain the real amount of benefit to be expected from the use of magnesia. He found "that the dense magnesia of the shops exerts but little action in removing arsenic from its solution in water; that a very light magnesia, now manufactured at Belfast, will remove about a twenty-fifth of its weight of arsenic from solution in water, when agitated with the solution for a few minutes, so that even ammoniacal nitrate of silver does no longer indicate the presence of arsenic; that the magnesia will remove about a twelfth of its weight of arsenic if agitated occasionally for a period of eight or twelve hours; that this proportion is removed entirely in less than three minutes if the mixture of water and magnesia be previously near the temperature of 212°; and that the same proportion is removed with as much speed at ordinary temperatures, if the magnesia be used in the form of a gelatinous pulp, as thrown down in a cold solution of sulphate of magnesia by a solution of caustic potassa and washed with cold water." The light calcined magnesia may be substituted for the gelatinous form in proportion of fifty parts to one of arsenic.†

7. *Sesquioxide of Iron*.—In Mr. Houghton's case‡ of poisoning by arsenious acid, where the quantity taken was about half an ounce, after the use of emetics and the application of the stomach-pump, the hydrated sesquioxide of iron was administered in considerable quantities. The efficacy of the antidote is inferred from the fact that, on examining the contents of the stomach, no traces of arsenic were found until means were taken to set it free by the addition of acids; but that it was readily detected in the fluid brought up by the stomach-pump, which had been used before the oxide of iron was given. "With the exception of the red patch near the pylorus, every part of the mucous membrane, which had been acted upon by the poison, was thickly coated with iron, as though the antidote had been attracted by the poison, which, indeed, it had so completely combined with as to be incapable of detection after repeated careful examinations." These facts, namely, the attraction of the iron by the arsenic, and the absence of free arsenic in the stomach after death, form, in Mr. Houghton's opinion, "strong corroborative evidence of the value and efficacy of iron as an antidote, and hold out the strongest inducement to administer it promptly and freely in cases where arsenic has been taken in poisonous doses."

[This description of the virtues of the sesquioxide of iron, in poisoning by arsenic, is more favourable to its pretensions as an antidote than previous chemical inquiries and experiments on animals would have led us to expect. There is room for a series of very useful experiments on the relative value of the three

\* Gaz. des Hôpitaux, Mai 21, 1846.

† Month. Journ. Med. Science, Aug. 1846.

‡ See page 294.

leading antidotes—the oxide of magnesia, the antidote in question, and finely divided animal charcoal.]

8. *Tests for Arsenic.—Modification of Marsh's Apparatus.*—M. Blondot has proposed, in order to arrest and regulate at pleasure the disengagement of the hydrogen gas, to make use of a Woolf's bottle having three apertures. He suspends the zinc, reduced to laminae, or rolled into spirals, to a piece of glass rod, which he makes to slide through the central aperture of the bottle, by the medium of a cork. By this means he is enabled to regulate the production of the gas, or even to suspend it. The fluid experimented upon is poured through one of the other apertures, and the arseniuretted hydrogen issues from the third.

In order to avoid the frothing which so often interferes with the use of this test, he suggests that we should first disorganize the tissues by concentrated sulphuric acid, and apply a gentle heat till they are reduced to a kind of paste, which is to be treated with distilled water, and a current of free chlorine made to pass through it. It is then to be filtered, and the clear liquid to be used in Marsh's apparatus.\*

9. *New Method of Distinguishing the Arsenical from the Antimonial Stain.*—M. Cottereau, jun., has proposed that, in order to distinguish the stain of arsenic from that of antimony, the suspected metal should be subjected to the action of the vapour of phosphorus.

To effect this he collects the stain on a porcelain capsule, and, having broken the phosphorus into small fragments, and placed them in another shallow saucer, he inverts the former over the latter. He then leaves them for several hours at the ordinary temperature of the room, and should the stain be composed of arsenic, it will be found to have disappeared within a few hours, while, on the contrary, should antimony be present, the crusts remain unaltered for more than a fortnight. Sometimes, however, antimonial stains are found to disappear in part. By placing the saucer over a vessel containing a solution of sulphuretted hydrogen, the vapours of this gas will cause either stain to reappear, that of arsenic in the state of the yellow sesquisulphuret, and that of antimony as the red sulphuret.†

[For an account of a method of distinguishing the stains by iodine, see the Third Volume of the "Abstract," p. 286.]

*Detection of arsenic in animal textures.*—MM. Fresenius and Babo, not satisfied with the complicated process which they had already recommended, for detecting arsenic in animal textures, have, in the month of May, 1846, proposed a still more elaborate method, which, whatever its scientific merits, is open to the very serious objection of occupying a great deal of time. The simpler process proposed by MM. Danger and Flandin, besides being more easy of application and more certain of success, possesses the advantage of requiring but 3 hours for its completion, while that of MM. Fresenius and Babo requires 46 hours. The former method consists but of four operations.

1st. Treat the organic matter with strong sulphuric acid.

2d. Treat the carbon so obtained with aqua regia.

3d. Treat the residue with boiling water, and filter.

4th. Transform the arsenic into arseniuretted hydrogen in Marsh's apparatus; decompose the gas by heat and weigh the product.‡

10. *Poisoning by the Salts of Mercury.—Corrosive Sublimata.*—Three cases of poisoning by this salt of mercury, of which one terminated in recovery, but the other two ended fatally, are recorded by Mr. Alfred Taylor §. The first case was that of a female, æt. 25, who, in the act of swallowing a tablespoonful of a mixture containing corrosive sublimate dissolved in spirits of camphor, was seized by the throat by her husband, so that a very small quantity of the poison was swallowed, and its action was confined chiefly to the mouth and lips. "The lining membrane of the mouth was quite white, but not abraded, the lower lip completely coated, and probably swollen to an inch in thickness. The symptoms were those of general irritation. The gums were sore after a few days; but there was no salivation, nor was there at any time suppression of urine."

The second case was communicated to the reporter by Mr. John Welch, of

\* Nouvelle Encyclog. des Scienc. Méd., Avril 1846. † Gaz. des Hôpit., Août, 1847.

‡ Journ. de Chimie, and Dublin Med. Press, Dec. 1846.

§ Guy's Hospital Reports, New Series, vol. 4, pp. 464 et seq.



Drury lane, and is remarkable for the rapidity with which it proved fatal. The following are the leading particulars of the case. The deceased, a man of intemperate habits, about thirty years of age, had been drinking on the afternoon of his death. Between five and six o'clock he sent his wife out for some porter, and while she was gone he mixed a white powder (corrosive sublimate) with some tea and drank it off. On her return, seeing the froth issuing from his mouth, she taxed him with having taken poison, which he admitted. She immediately raised an alarm, which brought some neighbours to her assistance, who, in less than five minutes, procured the attendance of Mr. Welch; "so that, from the time the first alarm was given, which was at *ten minutes to six* (so sworn by one of the witnesses), and the arrival of Mr. Welch, which he noticed to be at *ten minutes after six*, not more than twenty minutes could have elapsed, and adding to that another additional five minutes, that being the time his wife was away fetching the porter, which was at a public-house only three or four doors off, it appears certain that the death of this man took place in less than *HALF AN HOUR*." This is by far the shortest period within which this poison has been known to prove fatal, the minimum previously established being *two hours*; but it may admit of doubt whether death was due solely to the corrosive sublimate, as the deceased had been drinking before he swallowed the fatal draught, and "the ordinary train of symptoms peculiar to this poison do not appear to have presented themselves." Moreover, the body was not examined after death, and it is possible that, had a *post-mortem* been performed, the cause of death might have been discovered in the brain. The deceased, according to the account given by a bystander, complained of a burning heat in the mouth and great nausea. When Mr. Welch arrived (twenty minutes after swallowing the poison) "he found the man totally insensible; the breathing somewhat laborious (almost inclined to stertor); pulseless at the wrist, with a countenance pallid, but neither anxious nor distorted. In less than a minute after his arrival, without any struggling or convulsion, he died." The mouth, lips, and fauces were white and corroded, and about a tablespoonful of the contents of the stomach, "of a watery character, tinged with mucus," lay near the body.

In the third case, about one drachm of the poison, dissolved in about half a pint of water, was swallowed by a stout muscular man, on the morning of April 16, 1846, at about eleven o'clock. He died at nine P. M. of the 20th, having consequently survived nearly *four days and a half*. In addition to the more familiar symptoms, there was a leaden blue line on the gums, and the same colour round the margin of the tongue. The urine was suppressed during the whole time, and there were no symptoms of salivation. On examining the body, sixteen hours after death, the appearances most worthy of note were inflammation of the œsophagus, stomach, cæcum, and ileo-cæcal valve, and large intestines. Portions of the mucous membrane of the cæcum were of a deep purplish colour, with sloughing patches, tinged green by fæces. Oval patches of the same character, of the size of small almonds, "were symmetrically disposed throughout nearly the whole extent of the large intestines, in transverse rows of *three*, each patch corresponding to a sacculus, and separated from its neighbour by a longitudinal band of muscular fibre. The mucous membrane between these was of a deep purplish black hue, with arborescent vessels at small intervals." The inflammation was most intense about the cæcum and ileo-cæcal valve.

In a case reported in the same journal for April 1844, two drachms were swallowed, salivation appeared in *four* hours, and death took place in *three* days. In this case the dose was a drachm, no salivation took place, and death happened in *four days and a half*.

11. *Mercurial Salivation*.—A case of profuse salivation occurring under the use of small doses of calomel in nephritis is also recorded by Mr. Alfred Taylor.\* The quantity of calomel taken by the patient did not exceed two grains and a quarter daily for five days, which gave rise to the question, whether salivation is more apt to occur in this than in other forms of disease. The high authority of Dr. Christison is adduced in the affirmative, and as opposed to the free administration of mercurial preparations in cases of renal disease, attended with albuminous urine.

\* Guy's Hospital Reports, New Series, vol. 4, p. 443.

His opinion, however, as expressed in a letter addressed to the reporter of the case, is by no means an unqualified one, and is opposed to that of Dr. Williams, which was cited before the coroner by the solicitor for the prisoner. The mercury was prescribed by an unqualified practitioner.

12. *Poisoning by the Salts of Lead.*—A case of recovery, in three days, after swallowing an ounce and a half of the sugar of lead, occurred in Guy's Hospital, May, 1846, and is also reported by Mr. Alfred Taylor.\* The patient was a female, aged 41. The symptoms presented nothing remarkable. A second case of poisoning by lead, in which the history was imperfect, but the nature of the case was inferred from the blue line on the gums during life, the general character of the symptoms, and the post-mortem appearances, with the results of a chemical analysis of the liver after death, is also reported in the same work, and by the same hand. (p. 471.) The poison was identified by sulphuric acid, sulphuretted hydrogen, and iodide of potassium; but was not obtained in the metallic state.

13. *Existence of Normal Lead in the Body.*—Mr. Taylor, in his account of the chemical analysis of the liver of one of the patients whose case is referred to as one of poisoning by lead, takes occasion to observe, "that on examining the ash obtained by incinerating the soft parts of the body for lead and copper, I have not found a trace of those metals, where care had been taken to exclude them during the analysis, and several tests had been employed. If sulphuretted hydrogen gas only be used as a test, I can easily imagine that iron would be frequently mistaken for lead." Mr. Taylor also, in this as in other analyses, by incineration of the soft parts of the body, points out the embarrassment occasioned by the presence of phosphate of lime and oxide of iron in the ash. The first obscures the solubility in caustic potash of the precipitates of lead; and the last gives with sulphuretted hydrogen a precipitate which might be confounded with the sulphuret of lead.†

14. *Impregnation of Water with Lead.*—It is generally supposed that the saline crust found in the interior of old leaden pipes is sufficient to protect the lead from being acted upon by the water; but Mr. Osborn, at the meeting of the British Association, in 1846,‡ stated that the water in the neighbourhood of Southampton still continued to act upon the lead with the same energy, even after the formation of the insoluble crust, as when the pipes were first laid down. He, therefore, sought for some new solvent, and found, in some water, whose source was in the New Forest, uncombined chlorine, and also free carbonic acid. The chlorine existed in the proportion of 0.296 in 3xx, which, combining with 0.864 parts of lead, would form 1.16 parts of chloride of lead in the imperial pint.

15. *Poisoning by Tartar Emetic.*—Mr. David Hartley§ has related the particulars of two cases of this kind, terminating fatally, where the doses taken were ten grains. The subjects were a boy, aged 5 years, and a girl, aged 3 years. The girl lived about twelve or thirteen hours; the boy eight hours. From the particulars that could be gained from the friends, it would appear that the children had complained of pain in the back and headache in the morning, for which symptoms the mother had administered the emetic tartar. In about twenty minutes after taking the powders, they were both seized with vomiting and purging, prostration of strength, convulsions, and tetanic spasms. Mr. Newman, who was called in, found the little girl with a remarkable distortion of countenance, strabismus, violent convulsions, tetanic spasm of the jaws, and great thirst. Upon examining the bodies after death (111 hours) Mr. Hartley found the mucous membrane of the stomach and intestinal canal inflamed, and with the exception of some spots, presently to be mentioned, no signs of ulceration were seen. The brain was found highly congested throughout, and in the girl the arachnoid was found more opaque than natural. Moreover, in the stomach of the girl, "where the inflammation was greatest, there were two or three white spots, each about the size of a split pea, which, with the aid of a magnifying glass, appeared to be the commencement of ulceration." The poison could not be detected in the contents of the stomach.

Fatal cases of poisoning by tartar emetic are not of very common occurrence, in consequence of its highly emetic properties leading to its immediate rejection from the stomach. The rapidity with which death occurred in these cases is also

\* Guy's Hospital Reports, New Series, vol. 4, p. 476.

† Medical Gazette, Sept. 1846.

‡ Ibid. p. 475.

§ Lancet.



worthy of note, being in the one case in eight, in the other in twelve hours. The commencement of ulceration in the stomach and the peculiar tetanic rigidity of the muscles of the jaw are also worthy of attention.

16. *Poisoning by Zinc.—Effects of Oil on Zinc Vessels.*—M. Chevallier and M. Andouard state that oil, if long kept in vessels made of zinc, is apt to act upon the metal, and become impregnated with some noxious matter, and that consequently, when used, it is liable to cause disastrous accidents. The particulars are not mentioned; but they consider that Arsenic, which is generally an impurity in zinc, is the cause. If so, it is probable that some of the vegetable acids found in oil that has been long kept, unite with the arsenic, and form with it a soluble deleterious salt.\*

Moreover it has been found that cider kept in vessels made of zinc acquires an acid styptic taste. A dealer in cider, after keeping some in a cistern made of this metal for three months, found it to contain a notable quantity of acetate of zinc, a salt possessing poisonous qualities. As zinc is getting into more and more extensive use in the arts, these facts ought to be borne in mind.

17. *Poisoning by Opium—Use of Electro-magnetism—Recovery.*—Joseph Miller, aged nine months, swallowed, on the 7th of February, 1846, at one o'clock A.M., twenty-five minims of laudanum, which were given by the mother to procure sleep. Soon after, the mother's attention was called to the child by its loud breathing; it was then applied to the breast and soon fell asleep, and continued so for six hours. At seven the breathing was more oppressed, and the child insensible to all impressions; at eight, "its countenance was pale, with an expression of deep and placid repose; eyelids closed, and the child appeared in a state of slumber, and if roused it exhibited a tendency to relapse into sleep; breathing laborious, at times stertorous, at others accompanied with a distinct stridor; there was bronchial irritation and expectoration. An emetic of one grain of tartar emetic, with five grains of ipecacuanha in solution, was then given alternately until vomiting occurred. At half-past eight the mother confessed that she had given laudanum, when another emetic of three grains of antimony and five of ipecacuanha was given, and flagellations and repeated agitations, together with cold affusion, were employed. The tartar emetic solution was still repeated in half-grain doses every ten or fifteen minutes, to relieve the chest, and vomiting was always attended with benefit. This treatment was continued for two hours, but the restored consciousness was always imperfect, and succeeded by coma when the stimulating influence was withdrawn." At one o'clock P.M., "Congestion of the brain had increased; all means failed to rouse the patient; the coma was augmented, and the vital energy decreasing rapidly. At this period Dr. Barry recommended galvanism to be applied." The electro-magnetic coil was then used; and it was not until the regulator was moved to its highest point, nor until the current of electricity was at its maximum of intensity, that signs of perfect recovery occurred. This was continued for five hours, and the child ultimately recovered. The dose of laudanum in this case was so very large, to allow of recovery in so young a child, that it was supposed to have been a weak preparation; but Dr. Christison analysed it, and found it to be of the usual strength.†

18. *Poisoning by Prussic Acid.*—An interesting case of this form of poisoning is described by Mr. W. T. Lowe, of Aldersgate street, and published with the results of the chemical analysis, and a short commentary, by Mr. Taylor.‡ Mr. Lowe was hastily summoned to a young man, said to be taken suddenly ill. Upon his arrival he found him supported lifeless in a chair, with an extremely pallid countenance, placid aspect, dilated pupil, lips slightly livid. There had been no escape of urine and fæces; the mouth was clear, and free from the odour of the acid. Cold affusion and ammonia to the nostrils were employed, but without effect. At first there was some reason to believe that the deceased had fainted from fatigue and want of food, but on examination an empty phial, corked, and labelled, "Acid. hydrocyan. P. L. Poison," was found in the pocket of an under-coat. Two drachms of the poison had been purchased by the deceased on the previous day, which

\* Nouvelle Encyc. des Scienc. Med., April 1846.

† Dublin Med. Press, April 22, 1846.

‡ Guy's Hosp. Rep., New Series, vol. 4, p. 489.



was proved, by analysis, to contain two per cent., and the quantity taken contained upwards of two and a half grains (2.54) of anhydrous acid. From the testimony of the proprietor of the house and the servant, who saw him immediately after taking the poison, coupled with other circumstances, it would appear that the deceased, after taking a quantity of the dilute acid of the Pharmacopœia, containing more than two and a half grains of anhydrous acid, descended a flight of *thirty stairs*, and walked twenty paces. It is also probable that after swallowing the poison he corked the bottle, and placed it in the pocket of his under-coat. As he was falling he threw his arms about, breathed hard, but uttered no sound approaching to a scream. The deceased was in the habit of taking laudanum, and, four days previously, had attempted self-destruction by swallowing two drachms of it. The suggestion was naturally thrown out upon the inquest, that this habit might have made him less susceptible of the action of the prussic acid. No post-mortem examination was made.

19. *Suicide by Prussic Acid*.—Dr. Fleming communicated the following case to the Medico-Chirurgical Society of Glasgow, 12th May, 1846. "A gentleman, aged 45, of stout muscular make, called at a tavern, which he was in the habit of frequenting, on 23d April, 1846, at five o'clock, P. M. He is stated to have complained of being faint, asked to be allowed to rest in another room, and to have a glass of water; he appeared agitated, and breathed somewhat laboriously, but, perhaps, he was slightly intoxicated. He was shown into a room, and took his place, in a reclining position, on the end of a sofa; a tumbler, about three fourths filled with water, was placed at his right side. He cannot be said to have been left alone for an hour after this, as a party were drinking in the same room, and the attendants were occasionally in it." About six o'clock he was left alone, the door of the apartment was shut, and he was still lying on the sofa, and breathing as if he were asleep. In about three quarters of an hour after this the room was entered. He was nearly in the same position, but his arms were lying easily by his side, and he was quite dead. A half-ounce phial, labelled "prussic acid," was found, loosely corked, in his right trousers-pocket. The body was examined sixty hours after death, but no odour was detected from the mouth or body. The following report of the appearances is slightly condensed from the original account.

Features full, expression composed, and as if asleep, the cheeks even retaining their natural ruddiness. The cornea prominent, the eyes glistening as in life, the pupils about half dilated, the limbs having the degree of rigidity usual at the same period after death, the abdomen having a greenish hue, indicating the commencement of putrefaction. The mouth was firmly closed, and no fluid had been discharged from it. The right sleeve and side of the shirt were stained with bloody serum, which had oozed from the veins opened in the arm.

*Head*.—On separating the scalp the veins discharged blood freely, and, on removing the skull-cap, blood exuded copiously from innumerable points of the dura mater, which membrane was unusually adherent to the brain near the falx over the middle lobes. The longitudinal sinns, and the veins leading to it, were turgid with dark-coloured fluid, particularly at the posterior and depending part. There was a considerable degree of serous effusion in the arachnoid sac. The substance of the brain was of a healthy consistence and colour, but the blood-vessels were full. Each of the lateral ventricles contained about two drachms of serum. The choroid plexus was unusually dark and vascular. Fully a pound of blood flowed from the head during the inspection. The odour of prussic acid was not perceived either from the brain or blood.

Upon opening the thorax and abdomen the distinctive odour of the poison was quite perceptible, even to the peculiar acrid sensation it produces on the fauces.

*Thorax*.—The pericardium contained six drachms of serum, the heart appeared of its natural size, but was very firmly contracted, so that the walls were in contact; all its cavities were perfectly empty, and as free from blood as if they had been washed. The aorta and large vessels were also quite empty and flaccid; the veins were distended with blood, which was unusually dark-coloured and perfectly fluid. Not the smallest trace of coagulated blood could be found in any part of the body. Extensive pleural adhesions, of long standing, existed on the left side, and at the upper part of the right side; the substance of the lungs was

healthy; posteriorly very much gorged with blood; their colour, when cut into, was a light rose-pink (particularly at the anterior part, from which the blood had gravitated), and fluid blood flowed copiously from the cut surfaces.

*Abdomen.*—The stomach and its contents were carefully removed, and put into a closed jar; when examined the following day it presented no unusual appearance externally, nor on its mucous surface. The liver was enlarged, hard and mottled, of a gray colour, and by no means loaded with blood. The gall-bladder contained a gall-stone, and was filled with a fluid, having more the appearance of venous blood than of bile. The spleen was large, soft, and engorged. The kidneys highly congested. The peritoneal covering of the intestines had a reddish tint. The bladder contained about six ounces of urine.

The presence of the poison was not detected in the contents of the stomach until they were subjected to disillation. Prussic acid was readily detected in the fluid so obtained.

It would appear that about half an ounce had been taken, and that the strength of the acid was 3·3 per cent., half an ounce of which would contain about eight grains of real acid.

The chief points of interest in this case are—1. The absence of the shriek; for, had it occurred, it must have been heard by some men who were in the next room all the time. It was also absent in the cases related by Mr. Nunneley, Mr. Hicks, and Dr. Guy.\* 2. The power and consciousness that remained, after swallowing this large dose, to perform an act of volition and motion. The bottle was found, loosely corked, in his right trousers-pocket, and it is clear that he must have swallowed the poison from the bottle, as there was no odour of it in the room, nor in the water standing by his side, which the landlady stated was nearly the same in quantity as when she gave it to him on his entrance into the tavern; there was no taste of the acid in the water. 3. The absence of the odour of the poison until the body was opened, although Dr. Fleming first examined the body one hour after death. This is the more remarkable, as the quantity swallowed was so large. 4. The placed appearance of the countenance, the glistening eye, and the ruddy colour of the cheeks, is also worthy of note. 5. The fluid state of the blood in every part of the body. 6. The state of the heart—the opposite of that observed in many recorded cases, as in the case related by Nunneley,† where “the heart was completely distended with dark fluid blood on both sides.” and there was “considerable hypertrophy, without dilatation, of the left ventricle.” In Mr. Hicks’ case, and in the case of Sarah Hart, the left cavities were empty, and the right filled with liquid blood. 7. The pink colour presented by the lungs.

From the state of the heart in this case, Dr. Fleming is led to infer that “it was the last organ in which vitality existed, and that its contractions, up to the moment of death, were sufficiently strong to propel all the blood from its cavities.”

[It is probable that this strongly contracted and empty state of the heart, or of its left cavities, will be found in all those cases in which death takes place very promptly, under the operation of a large dose of the poison; such as will be presently stated, is the view taken by Mr. Nunneley as the result of his experiments on animals.]

\*20. *Experiments on Animals.*—Mr. Nunneley, of Leeds, to whom we are indebted for two interesting cases of poisoning by prussic acid, in the human subject,‡ has illustrated these effects by a large series of experiments on animals.§ The numerous cases of poisoning by this agent, which have taken place during the last two or three years, and the increasing familiarity of the public with its properties, give importance to every attempt to determine, experimentally, its effects on animal life.

“Whether these are always uniform or not; what dose may destroy life; if the same dose always produces the same effects; if the effects vary according to the quantity taken, or to the manner and mode in which it is exhibited; if the degree

\* See on this subject, Abstract, vol. ii. p. 317.

† Month. Journ. of Med. Science, July, 1846.

‡ Half-yearly Abstract, vol. ii. p. 313.

§ An Experimental Inquiry into the effects of Hydrocyanic Acid produced upon Animal Life. By Thomas Nunneley, Esq., F.R.C.S.E., &c. &c. Transactions of the Prov. Med. and Surgical Association, New Series, vol. iii.



of concentration or dilution alters the effects, and if there be any means of counteracting its action—if so, if we are to look for an antidote to the poison, or only to a remedy for the effects of it;—if to an antidote, what is the most potential? if to a remedy only, which shall be selected? In fact, when called to a person suffering from the effects of a poisonous dose of hydrocyanic acid, what is to be done?"

These are the questions which Mr. Nunneley proposes, and which he illustrates more or less completely by his experiments; of which eighty were made on dogs, a still greater number upon other creatures, vertebrate and invertebrate, and others upon plants. The author prefaces his account of his experiments by expressing his opinion that the action of the poison is "essentially the same" upon warm and cold-blooded animals, and that inferences drawn from experiments upon animals, especially on the dog, may be applied with safety to the human subject. He then proceeds to describe the mode of performing his experiments, which was as follows. During each experiment an assistant was present, who, like himself, was provided with a watch; he was placed at a table with pens and paper, so that each observation was recorded at the moment it was made. The acid used in the experiments, except when otherwise stated, was recent Scheele's acid, containing five per cent. of real acid. A stronger acid, containing 25 per cent. of the real acid, was used in some of the experiments. After these preliminary explanations, the experiments, occupying nearly sixty pages, are given in detail, followed by general conclusions. Some additional experiments are also given in an appendix at the end of the volume. Our space will allow only a short abstract of the conclusions at which Mr. Nunneley arrives upon some of the leading points.

*Symptoms.*—When the effects of the poison is not too rapid to be observed, the symptoms are the following: giddiness; loss of muscular power, causing the drooping of the head, the falling of the lower jaw, and the protrusion of the tongue; an appearance of distress and constriction in the fauces; hurried and panting respiration; spasm, tonic or clonic, according to the strength of the dose, and the susceptibility of the animal; simultaneous cessation of the heart's action and of the respiration; with lividity of the face, protrusion of the eyes, congestion of the venous system, and death within a short interval of time. When, however, the dose of the acid, or the susceptibility of the animal is less, the rigidity of the muscles soon diminishes or ceases, and is followed by more or less complete paralysis, rapid and weak, or deep, slow, and sighing respiration, and a rapid and feeble beat of the heart. This state of paralysis, with increasing weakness, may continue till the animal dies, or the animal (as is more frequently the case) is ultimately convulsed and paralysed, the heart continuing to beat very feebly for two or three minutes after all indications of sensation and other motion have ceased, though by no means rarely death is preceded by a strong convulsion. If the animal recovers, it will often be in a state of complete paralysis, succeeded by a slight convulsion of the limbs, or a spasmodic respiration. These movements gradually strengthen into powerful convulsions, accompanied by loud howling, reflex action and sensation return, the animal then seems to fall into a comfortable sleep, and after a variable period will either wake up surprised and walk slowly away, or continue very feeble for some time. Such are the leading symptoms observed in animals poisoned by prussic acid. There are, however, certain individual symptoms and questions relating to them which require to be more closely examined.

*Circumstances which affect the activity of the poison.*—The strength, vigour, and age of the animal; the empty or full state of the stomach; the quantity and degree of concentration of the poison; the repetition of the dose; and the mode of its administration, are all examined by the author. He concludes, as might be expected, that the more vigorous and the older the animal, the larger the dose required to destroy life; but that the *very young* animal is less susceptible than one of the same species a little older; that an empty state of the stomach is favourable to its action; that there is no fixed quantity of the poison which will invariably destroy life, but that "the boundary between the dose which is hazardous, or even will destroy life, and that which may be taken with impunity, is very slight and indefinite," and that the same creature "is liable to be seriously affected by a dose



which at another time would produce but little effect;" that "the degree of concentration of the poison has no very material influence over its action," except "that a moderate degree of dilution renders the action of the acid more speedy, probably from bringing it, at the same instant, into contact with a larger surface;" that "the action of the acid is not proportionably speedy to the quantity taken;" that it is not, in a correct sense of the term, a cumulative poison, but that, on the contrary, "the system becomes habituated to it, and, by repetition, will endure a dose which, if given at first, would have been destructive;" that "the poison acts with almost, if not absolutely, equal rapidity and certainty when applied upon a mucous membrane, as the conjunctiva, the rectum, or the vagina, as when swallowed;" that "it acts with great rapidity and certainty when breathed in the form of vapour, but not readily through the epidermis;" and, lastly (see Appendix), "that hydrocyanic acid does not produce any other effect when injected into the blood than when administered in any other way," the only difference being a somewhat speedier effect, and more decided. Indeed the author doubts whether "the same quantity coming into *actual* contact over an equally large surface, upon a mucous membrane, whether alimentary, respiratory, or even the conjunctiva, would not produce, if not as speedy, at least as decisive, effects as when injected into the blood."

Among the individual symptoms to which the author specially directs attention is the *shriek*, to the occurrence of which so much importance has been attached. It appears that it occurs in only one half the animals submitted to experiment. When it does occur, it is a peculiar cry, indicative of severe distress, different from anything heard in any other state, and, as the author thinks, "characteristic of the poison." Another symptom noticed by Mr. Nunneley is the *expulsion of the fæces and urine*. The fæces alone were passed in about a tenth of the cases; in another tenth both fæces and urine; in a far larger number the urine alone; and in about two fifths of the whole number of cases neither fæces nor urine. The *diagnosis* of poisoning by prussic acid is not made the subject of separate inquiry; but there is an incidental observation which deserves to be recorded, to the effect, that though, in marked cases of poisoning by prussic acid, there would be no danger of confounding the symptoms with those of opium, still, if the animal survive some time, it may fall into a deep quiet sleep, closely resembling that produced by opium; and our author expresses his strong suspicions, that in at least one recent case, where death was supposed to have been induced by opium, it was caused by hydrocyanic acid. Under the head of *post-mortem appearances*, we may notice a distinction which may tend to explain the variable condition of the circulating system. "If," as our author observes, "death has been long delayed, or the dose of acid very small, the blood is usually dark in colour, alike on both sides of the heart, and all the cavities of the viscera may contain more or less blood, especially the right, which is often much distended; while, on the contrary, if the death has been sudden, in almost every case the left side of the heart, and especially the ventricle, is found to be perfectly empty and rigidly contracted, while the right side of the heart contains blood, being in some cases, though by no means always, much distended." In some cases, too, the blood is found highly flórid, instead of having its usual venous character. Another post-mortem appearance, on which some stress is laid by the author, is the congested condition of the membrane on which the acid is applied. He also calls attention to the greater rigidity of the muscular system after this mode of death. These experiments of Mr. Nunneley further throw some light on the length of time that volition and entire control of the voluntary muscles may continue after a fatal dose of the poison. Thus, one dog, after taking the poison, "went down three or four steps of some stairs, saw the door at the bottom was closed, and came back again;" and another "went down, came up, and then went down again, the whole flight of a steep winding stair-case;" and a third "retained sufficient vigour to jump over one of the dogs, and then actually leaped completely across the open top of the staircase."

In reference to the *treatment* of poisoning by prussic acid, Mr. Nunneley's experiments do not give much encouragement to the use of any of the popular antidotes, or counter stimulants. Chlorine, nitrate of silver, iron, in its several forms of red oxide, the fresh precipitated green oxide, and the sulphate, alone and in combina-

tion with alkalies, electricity and galvanism, cold affusion, emetics of sulphate of copper, sulphate of zinc, and tartarized antimony, sulphuric ether, and ammonia, are all dismissed with condemnation, or slight and qualified praise. On the use of the cold affusion, Mr. Nunneley has the following judicious caution. "I think we may fairly consider that, when the dose has been of barely sufficient strength to destroy life, cold affusion possesses some power for good, and hence it is one of the means to which we should without any loss of time have recourse. In one or two of the cases I am inclined to think the plunging was rather injurious than not, and I must take the liberty of warning gentlemen against the supposition, that if the moderate dashing of water is useful, a more continued and general application of it would be still more so." [It is no doubt as a shock that cold water is useful; but in as far as it chills the surface, it is injurious in all those cases where, death not taking place very promptly, the surface is blue and cold, and the respiration oppressed. In this state warmth, friction, and stimulants are strongly indicated.] A good shaking has seemed to Mr. Nunneley to retard the operation of the poison. The general result to which the author arrives in reference to the use and value of antidotes is this—"That when the dose of the acid has been large, its effects are such as to completely set at defiance all our means of preserving life, even though we were provided with them for immediate application; and that even where the dose has been much smaller, we have no antidotes, while our remedies are of little efficacy, as compared with those which we can avail ourselves of when other agents destructive to life have been used."

21. *Antidotes.—Oxides of Iron.*—This antidote, introduced by Mr. Smith, of Edinburgh, consists of the mixed oxides of iron, and its efficacy depends on the property which prussic acid possesses of combining with these oxides when a carbonated alkali is also present, and of forming Prussian blue, a salt insoluble in water, and without any action on the animal economy. The antidote is easily formed by adding an excess of carbonate of potassa or soda to a solution of the common sulphate of iron, and preserving the mixture in a stoppered bottle.

The success of its administration, even in cases where the anhydrous acid was used by Mr. Smith, induced M. Larocque to test its efficacy further. To do this completely he employed acids of different strengths. His first experiment was made with the medicinal acid prepared according to the formula of Gea-pessina, and the subject of it was a dog, of the ordinary size. One gramme of this acid was given to the dog, and about 35 or 40 grammes of the antidote was introduced into its throat, at an interval of twenty seconds. After the administration of the antidote the animal breathed more freely, and in a few minutes it walked as before taking the poison. Encouraged by this success, he then used the anhydrous acid, prepared according to M. Gay-Lussac, in doses of fifteen drops, and in every case the animal died before he could administer the antidote, notwithstanding the diligent application of the vapour of chlorine, &c. From this he concluded that the anhydrous acid, used in the experiments of Mr. Smith, who succeeded in saving dogs, even after the administration of thirty drops, must have been either impure or decomposed.

Upon examining the lips and tongues of these dogs after death, he discovered the existence of numerous wounds and abrasions, caused by the gag which he had used, and to these he attributed the rapid absorption of the poison. He then instituted other experiments with the same acid, without using the gag; but these were attended with the same fatal results. After this he experimented with Prussic acid, diluted with an equal bulk of water, and in every case the dog died in the course of a few seconds.

But though the antidote proposed by Mr. Smith was thus found to be useless in cases where the pure acid was used, or where it was only diluted with a small quantity of distilled water, M. Larocque found it of essential service where the Prussic acid had been mixed with seven or eight times its bulk of water, provided it were administered as soon as the first symptoms of poisoning occurred (at an interval at the most of twenty or thirty seconds after the administration of the acid), but that it generally failed if given after the lapse of a minute, when insensibility had set in. In every case where the oxide of iron was given at an early period the animal completely recovered, and was the subject of other experiments afterwards; but in no case where stupefaction had once occurred did he succeed in



recovering the animal. As it was clear that the antidote could act only on the poison contained in the stomach, and could not neutralize any that had been absorbed into the circulation, it occurred to M. Larocque that in cases where a large dose of the poison had been used, or where the symptoms had advanced so far as to destroy all hopes from the administration of the iron by the mouth, that if he were to make incisions in the animal, and then plunge it into the solution of the antidote, he might succeed in restoring it to life, and, if this failed, he hoped to succeed by injecting the antidote into the blood. He accordingly instituted the following experiments. He took a dog, of ordinary size, and caused it to swallow one gramme of the medicinal acid, and when in a state of stupefaction he introduced the antidote into its stomach, in order to neutralize the excess of acid. After this he made several incisions in its skin, and plunged it into a bath of cold water, in which he had dissolved 1000 grammes of the antidote, and finally, in order to render the effect more certain, he caused a current of water to fall on its head. All these measure failed to revive the animal, and it died after fifteen or twenty minutes. The same result obtained in another experiment with a younger dog.

He then tried the effect of injecting the antidote into the circulation by means of the jugular veins, and took great precautions to avoid the introduction of air. The dog experimented on, had swallowed one gramme of the medicinal acid when the injection of the oxide of iron was commenced; the animal died in thirty or thirty-five minutes. A second dog, treated similarly, died in two or three minutes. He then made a third experiment, with a dog of very small size, with the same dose of acid, and as soon as the first symptoms of poisoning had commenced, he gave the antidote by mouth, and also injected it into the vein; the animal seemed to suffer for a short time, yelled, and then suddenly became quiet. In a few days it was completely recovered.

Other experiments, not less interesting, were then made on other dogs, with the view of ascertaining how far the application of the common remedies, as chlorine, &c., were compatible with this new antidote. A young dog was made to swallow twenty drops of the medicinal acid, and upon the appearance of the first symptoms of poisoning the antidote of iron was given: either the quantity of acid absorbed was too great or the animal more susceptible of its effects than those experimented upon before, for the animal presented, in a very short time, no sign of life, when M. Larocque caused it to respire the vapour of chlorine. He applied the solution to the nostrils and jaws, and sprinkled it on the surrounding ground; in a short time the animal breathed with difficulty; little by little the respirations became more frequent; in about an hour afterwards the dog was enabled to move, and in a short time to walk about. On the morrow it appeared quite well, except that it exhibited repugnance to the food presented to it, and it was not until the third day that it began to eat. The second experiment of the same kind was equally successful; but the third was attended with fatal results.

In experiments made with from fifteen to thirty drops of medicinal acid, diluted with eight, ten, or twelve grammes of water, the administration of the antidote was always successful, provided it were not given too late, from which we may reasonably conclude that an animal will not die from the effects of diluted Prussic acid if the antidote be given sufficiently soon to neutralize the poison which is not yet absorbed into the system. As the diluted acid is always the form used by the suicide, this fact has an important application to the human subject. In order further to ascertain how the antidote acted, M. Larocque examined the stomachs of the animals killed during his experiments, and found them filled with the antidote. He then removed the contents, and treated them with hydrochloric acid diluted with water, in order to dissolve the excess of oxide present; Prussian blue remained, and he also found it in the intestines after thirty-six or forty hours. The autopsy was generally made fifteen or twenty minutes after death.

From these experiments M. Larocque concludes:

1st. That the antidote is of no use where the acid is administered in its anhydrous form, as its effect is too rapid.

2d. That the same remark applies to the acid diluted with an equal bulk of water.

3d. That we may expect the best results from this antidote, when it is admin-



istered as soon as the first symptoms begin to be developed, and when the medicinal acid has been used in doses of from one to five grammes.

4th. That when the medicinal acid has been diluted with a sufficiently large quantity of water, we have, in a majority of cases, a good chance of reviving the animal.

5th. That chlorine, used concomitantly with the antidote, may be of great service.

6th. That in desperate cases, where death is otherwise inevitable, we may, using all necessary precautions, resort to injection into the veins.\*

[Though these experiments are interesting in a scientific point of view, their practical utility, when applied to the human subject admits of doubt. To be of any service, the antidote should be kept ready prepared, and be applied, even according to M. Larocque, before the occurrence of insensibility. This in a very large majority of cases, would be utterly impracticable, owing to the rapid absorption of the poison into the circulation, and its consequent prompt action on the system; and as the medical attendant is rarely summoned before coma has supervened, the application of chlorine or ammonia to the nostrils, the use of the cold affusion, and in extreme cases artificial respiration, and warmth and friction to the surface, would be more likely to prove beneficial.]

22. *Tests.*—*New Test proposed by Mr. Austin.* Mr. Austin, of Dublin, proposes the following test for Prussic acid, and states that it is available even where the poison is present in very small quantities. The precipitate of cyanide of silver (say half a grain) obtained in the usual manner, is mixed with a small quantity of oxide of iron and carbonate of potassa, and the whole is fused in an iron or platinum capsule. The fused mass is then dissolved in half an ounce of distilled water, filtered and acidulated by a few drops of hydrochloric acid. This liquid is to be divided into two parts, to one of which a few drops of a solution of sulphate of copper are to be added, when the chocolate brown ferrocyanide of copper is thrown down, and to the other a few drops of tincture of iron, when the solution becomes intensely blue by the formation of the ordinary Prussian blue.†

23. *Liebig's new Test for Prussic Acid.*—In "The Chemical Gazette," for April 1, 1847, will be found a short account‡ of a new and very valuable test for this poison proposed by Professor Liebig. The nature of the test will be immediately understood from the following short extract: "A couple of drops of prussic acid which has been diluted with so much water that it no longer gives any certain reaction with salts of iron by the formation of Prussian blue, when mixed with a drop of sulphuret of ammonia and heated upon a watch-glass until the mixture has become colourless, yields a liquid containing sulpho-cyanide of ammonium, which produces with persalts of iron a very deep blood-red colour." This statement is fully confirmed, and the great value of the test firmly established by Mr. Alfred Taylor,§ who proposes a modification of it similar to that already recommended by him in the use of the silver and Prussian-blue test, viz., exposing the hydrosulphuret of ammonia to the vapours of the acid, evaporating the resulting sulphocyanide of ammonium to dryness, and then adding to the residue a persalt of iron. The test so applied is both prompt and delicate; it acts in a few seconds, and succeeds where both the nitrate of silver and the Prussian-blue test fail. Thus, in a comparative experiment, with an acid of the same strength, the Prussian-blue and nitrate of silver tests failed entirely to detect the  $\frac{7}{8}$ th of a grain in ten minims of water, while the new test detected the  $\frac{1}{333}$ th of a grain. The great advantages of this test, as modified by Mr. Taylor, are the avoidance of heat, and the objections to which its employment gives rise, and its applicability to organic substances even in a state of putrefaction. The test was also applied with success to laurel water, bitter almond water, essential oil of bitter almonds, decomposed prussic acid, cyanide of potassium moistened with water, cyanides of silver and mercury moistened with strong muriatic acid, ferrocyanide of potassium mixed with dilute sulphuric acid, and prussic acid mixed with decomposed organic liquids. The result of all these experiments is, that the process is more delicate, more speedily and universally applicable, and more certain and unob-

\* Gaz. Med., 15 Août 1846.

† Lancet, July 11, 1846.

‡ Extracted from Liebig's Annalen, Jan. 1847.

§ Med. Gaz., April 30, 1847.

jectionable in its results, than any of those yet suggested for the detection of this powerful poison." So that Liebig has "here done for prussic acid what Reinsch has recently done for arsenic." It is scarcely necessary to state that the test will not act characteristically unless the hydrosulphuret of ammonia, after exposure to the vapour of the acid, be evaporated to dryness, as the uncombined hydrosulphuret gives a black precipitate with the persalt of iron. The red colour of the sulphocyanide of iron is removed by a few drops of a solution of bichloride of mercury. Mr. Taylor recommends, as a simple way of applying the Prussian-blue test, that we should precipitate the mixed oxide from the green sulphate in a gelatinous form, and expose them to the vapour of the acid in a watch-glass.

24. *Poisoning with the Essential Oil of Bitter Almonds*.—In Vol. III., p. 290, of the "Abstract," a short and imperfect notice by Mr. Dampier of a case of poisoning by this substance will be found. A more complete history, furnished by Mr. J. H. Savage, of West Bromwich, has been published by Mr. Alfred Taylor, with several judicious observations.\* The following particulars are taken from Mr. Taylor's summary of the case. The dose was probably a large one, and after an interval of about *five minutes* from the swallowing of it (this period is inferred from the circumstances of the case) the man was observed "deliberately walking towards the staircase, conscious and self-possessed, for he replied rationally to questions put to him. The symptoms then appear to have come on suddenly, and to have commenced with vomiting, during which, probably, part of the oil which he had swallowed was ejected. He then became insensible, and the breathing as usual, convulsive at intervals; but, excepting slight opisthotonos, there were no convulsions, and there was no scream or shriek." "From the facts observed by Mr. Savage, it appears probable that the whole duration of the case did not exceed *seven minutes*, and the fatal symptoms were not manifested until within the last *two minutes*." The post-mortem appearances most worthy of notice, were pallor of the face, brightness of the eyes, lividity of the hands and feet, and strongly developed cadaveric rigidity (eighteen hours after death). The lungs were quite healthy, the venous system gorged with dark liquid blood, the mucous membrane of the stomach, especially at its cardiac extremity, red, as if acted on by a strong irritant. There was a marked odour of the oil of bitter almonds in the stomach and chest, and a faint odour of it in the brain. The poison was detected in the stomach ten days after death both by the silver and iron test applied to the distilled liquid, and in the contents of the stomach. About two drachms of the essential oil mixed with ale were found in the glass out of which the deceased had swallowed the fatal draught. Among the points to which Mr. Taylor invites attention, the inflamed condition of the mucous membrane of the stomach deserves to be noticed. It was present, as he observes in the "*Parisian Epileptics*," in a case, of which a drawing is preserved in the museum of Guy's Hospital, in Mr. Newham's case,† and in the stomach of a dog poisoned by Mr. Hicks, and in all these instances in a very marked degree. Mr. Taylor, therefore, concludes that "it is impossible to regard all these cases of an inflamed state of the mucous membrane as mere coincidences." The cases, however, to which Mr. Taylor refers were cases of poisoning by prussic acid, and not by the essential oil of bitter almonds, and it does not follow that the effect on the mucous membrane of the two poisons shall be the same. A reference to the cases of poisoning by prussic acid and by the essential oil of bitter almonds, in previous volumes of the "Abstract," will show how far the opinion which he expresses as to their effect on the mucous coat of the stomach is well founded. With regard to the poison now under consideration, it appears that in one case reported by Dr. Letheby‡ "the internal coat of the stomach, with the exception of some red petechial patches along the greater curvature was pale," and he afterwards says, "the inner coat is generally pale, excepting in one or two places, where there will be a blush of red (I have seen this in three cases of poisoning by oil of bitter almonds)." This, then, like most other post-mortem appearances, may be expected to vary greatly in different cases, depending on the strength and quantity of the poison, the full or empty state of the stomach, and the previous habits and existing condition of the deceased.

\* Guy's Hosp. Reports, New Series, vol. 4, p. 478.

† Abstract, Vol. I. p. 352.

‡ Ibid. Vol. II. p. 320.

25. *A Chemical Antidote applicable in all Cases of Poisoning by the Metallic Preparations and Compounds of Cyanogen.*—M. Duflos proposes for this purpose the use of a mixture composed of hydrated persulphuret of iron, magnesia, and protoxide of iron, which he states to be applicable in all cases of mineral poisoning, including the cyanuret of mercury, the most deleterious of all the compounds of cyanogen. He uses it also in poisoning by strychnia and morphia, as the magnesia reduces them to their basic state, in which condition they are scarcely soluble, and therefore absorbed with difficulty. The antidote is thus prepared: 1000 grammes of liquor ammoniac, sp. grav. 970, are saturated with hydrosulphuric acid, and the resulting hydrosulphuret of ammonia is mixed with 1500 grammes of distilled water and a solution of 75 grammes of the protosulphate of iron in 500 grammes of water is added. The bottle containing this mixture must be closed by bladder, and the precipitate be allowed to fall. The supernatant fluid is removed, and the precipitate is washed and preserved. Finally, 75 grammes of protosulphate of iron are again dissolved in 500 grammes of water, and 30 grammes of calcined magnesia, previously triturated with water, are added. This mixture is then shaken, and the precipitate is collected, washed, and added to the former. The resulting mixture is to be kept from access of air.\*

[This antidote is much too complicated a preparation to come into general use, and as it is readily spoiled by the presence of air, it cannot be kept for any length of time.]

26. *Poisoning by Belladonna Berries.*—As cases of poisoning by this plant are not common, the following account will be interesting. Many slighter cases occurred about the same time; all of which resulted from the parties partaking of tarts or puddings made with the berries of *Atropa Belladonna*, sold in the street by an ignorant herb-gatherer. The subjects of the following fatal cases were father and child, of the name of Parker. The following is the evidence of Mr. Day, of the London Hospital, before the coroner. "He was called to see the deceased (the father) on the 16th August, about eight or nine o'clock P. M. He was then in a state of insensibility, and unable to stand. On placing him on a sofa his head fell on his breast, his face was flushed, his lips and cheeks rather swollen, and the pupils of the eyes remarkably dilated. The pulse was very rapid, and the hands of the patient were moving unconsciously, as if catching at imaginary objects." The stomach-pump and emetics of sulphate of zinc and mustard were applied, and the patient vomited up a mass of meat and vegetables, and also some of the belladonna berries. "Cold water was then poured on his head, to rouse him from his state of insensibility; during which operation he struggled violently, and resisted all the efforts to hold him, and was quite outrageous. This treatment was persevered in for some time, and he was at last ordered to bed. He was then wrapped in warm blankets, and five drops of croton oil were then given, and in about one hour they freely operated. After this the man seemed somewhat composed; but still he was continually catching at imaginary objects. The pupils still continued dilated, and the pulse very rapid. About two in the morning he became restless and troublesome, frequently getting out of bed, acting wildly, and talking incoherently about his business. At six o'clock he became calmer, and continued so for a short time, when he gradually sunk and died at nine o'clock." Mr. Day then stated that "he saw the child Parker on the 16th, at ten o'clock at night, and he was then in a very excited state. His hands were moving rapidly, as his father's had, and his pupils were much dilated. The treatment adopted was the same as that used before, but the child died about six o'clock P. M. on the 17th. About one hour before its death the pulse was very rapid, 180 or 190 a minute, and the arteries of the neck beat rapidly, the skin being pungently hot." Both subjects were examined by Mr. Day. He found the heart of the child "spotted with red spots over its surface, and nearly empty of blood. The heart of the father was not spotted, and it was nearly full of black blood, which was fluid. The blood in both cases was black and quite fluid."†

Since the occurrence of the above cases, Mr. Banner has communicated another, arising from the use of the extract of belladonna for that of taraxacum.‡ The dose was about thirty grains, and the patient recovered. The symptoms first mani-

\* Gaz. des Hôpitaux. † Med. Gazette, Sept. 1846. ‡ Prov. Med. Journal, Feb. 1847.



fested themselves in about half an hour after swallowing the extract, which had been dissolved in water. Attention was first called to a strange and unnatural appearance about the boy; in about another half hour he began to talk incoherently, and was very restless; the delirium ran very high, but quickly passed off; he then became quiet, though he was constantly affected with twitchings of the arms. The boy vomited freely after drinking some tea; and Mr. Banner saw him about three hours and a half after the first appearance of the symptoms. He was then in a comatose state; the breathing was slow; the eyes fixed, and the pupils much dilated and insensible to the admission of light; the hands and feet were cold and moist; the pulse remarkably quick and intermittent. If roused, the patient would endeavour to seize the person holding him, would shout, and occasionally laugh loudly, and would throw out his arms, as if striking at an object; he could not articulate, though he often muttered; there were twitchings in the flexor muscles of the arms, particularly of the left; and he frequently seized hold of the bedclothes, as if he wished to cover himself up. He then had an enema, and warmth applied to the surface, for, as yet, it was not known that any mistake had been made. The enema operated well, but the symptoms continued much the same, a state of repose occasionally alternating with that of excitement. Suspicion was entertained that some narcotic poison had been taken; but it was not until two hours afterwards that this was ascertained, when the mother stated that she had obtained from a chemist a fresh supply of the extract the night before. Upon applying to the chemist, he acknowledged the mistake. Wine and water were freely given, cold was applied to the head, and a powder, composed of calomel and rhubarb, was exhibited, which acted well. "The delirium still continued during the night; but the pulse became fuller, and the stimulants were withdrawn." He grew more conscious, after having slept for a short time, but his pupils still continued dilated, and he did not appear to see very clearly; he also laughed very much. All these symptoms gradually passed off; but it was not till five days afterwards that the pupils contracted properly. For some days he complained of pain in his head, and dimness of vision; and it was nearly ten days before he entirely recovered from the effects of the poison.

27. *Poisoning by Conium Maculatum.*—The following case, presenting some degree of novelty, is quoted from the "Gazette des Hôpitaux."<sup>\*</sup> The French editor remarks, that the symptoms detailed are exactly those given by Plato, as occurred during the last moments of Socrates; a fact tending to prove that the modern and ancient hemlock are the same plant. The following are the particulars. A man, aged 43, after having eaten by mistake a quantity of the above plant, was seized with staggering, but was still enabled to walk for a short distance. He then fell down, and in a short time his inferior, and after that his superior extremities became paralyzed. At the end of three hours his respiratory movements ceased, though his pulse still continued to beat. He possessed his sensibility entire, and was enabled to converse until the last moment.

[This differs from most recorded cases of the kind, in the occurrence of paralysis and the entire absence of insensibility. More commonly coma, delirium, or even convulsions, are the immediate effects of the poison. Dr. Christison has observed the same symptoms as the above in his experiments with the extract of hemlock on dogs.]

28. *Poisoning by Pastinaca Sativa—Common Parsnep.*—The following is related in the "Gazette des Hôpitaux." by Dr. Unger. In March, 1846, a woman dug up some parsnep roots which had been planted in the preceding spring, and they were dressed in an earthen pot as her food was commonly prepared. This woman, as well as her husband and two children, partook of them. Dr. Unger was sent for in the evening, and found them labouring under symptoms similar to those of delirium tremens. They talked incessantly, had spectral illusions, fought among themselves, and occasionally burst into fits of laughter. Their countenances were pale, the pupils dilated, their looks vague, tongues clean, moist, and trembling, and their pulses smaller, weaker, and slower than natural: there was constant vomiting, but no purging. Sulphate of zinc was given without effect, until combined with ipecacuanha, which caused the rejection from the stomach of large quantities

<sup>\*</sup> November, 1847.

of undigested parsnep. The symptoms then abated, and by the next morning, they were all recovered, with the exception of a sense of weight in the head. It appears that a neighbour, who also partook of them, only suffered from vertigo and general uneasiness. It is probable that some mistake was made as to the nature of the plant, for it is not probable, as Dr. Unger thinks, that by having been allowed to remain in the ground, the roots had acquired properties similar to those of the wild plant.\* [As so many of these umbelliferous plants (such as the *Ernanthe crocata* or *Erihusa cynapium*) closely resemble each other upon a superficial view, and are by no means uncommon, we may fairly doubt whether the sweet parsnep was the plant employed.] As a supplement to this case, reference may be made to a case of poisoning by unripe potatoes, which gave rise to the symptoms of acrid poisoning. The treatment consisted in the use of emetics which caused the removal of the offending matter, when the patient recovered.†

29. *Poisoning by Carbonic Acid Gas.*—As instances of this kind are of rare occurrence in England, owing to the general use of open fireplaces in our sleeping apartments, the following will not be without interest. The account from which these particulars are taken was communicated to the "Monthly Journal of Medical Science,"‡ by Dr. Davidson, of Corstorphine.

It would appear that two gardeners, in the employ of a gentleman in his neighbourhood, retired, on the night of the 16th of November, 1846, as usual to rest, in a small outhouse, at the corner of the garden, having two sides formed by the garden walls. It was nine feet square, and had five small, air-tight windows in it; moreover, the door fitted closely. The room was heated by a stove, which had been lighted that afternoon at four o'clock, and as the combustion was not very brisk, no more coals were added that night. The stove had only been lighted twice that season, the previous occasion being about fourteen days before. When the men went into the room there was no smell or smoke, and they read for an hour before going to bed. One of the men, W. H., retired to bed a quarter of an hour before the other, A. M., and when the latter got in he observed the coals to be bright red, and no smoke to be issuing from the stove. Both men lay down with their faces towards the stove, and both fell asleep much sooner than usual.

As the men did not make their appearance as usual the next morning, a female servant went to call them at nine o'clock, and being unable to rouse them, Dr. Davidson was sent for. Upon entering the room, he states that there was a pale bluish vapour visible in the air, and a peculiar suffocating odour. He opened the largest window, and then, after ventilating the room, proceeded to examine the men. W. H. was found lying on his back, his face and lips pale, eyelids closed, and his eyes very sunken; an immense quantity of mucous froth had flowed from his mouth; his arms were folded across the abdomen, the thumb was turned into the palm of the hand, and the fingers were closed over it. The bedclothes did not appear to have been discomposed at all. He was quite cold and stiff, and the pupils were much dilated. All attempts to recover him were ineffectual. A. M. was in the same position as when he first lay down; the head and neck were slightly inclined forwards; he was moving one of his arms gently up and down; his respiration was noisy, short, and irregular, but not stertorous; the pulse was slow, weak, and intermittent; his features pale; his eyelids closed; pupils dilated, and eyes fixed; and the mouth and teeth were firmly closed. The body was cold and rigid, and the thumbs in both hands were placed as in the last case. He sighed when water was thrown over him, and he seems to have thrown the bedclothes partly off. Heat was then applied to the surface, and sinapisms to the chest, abdomen, and legs, and after the diligent employment of cold affusion, and his removal to another room, where a stream of air was constantly kept up, he recovered. Stimuli were also after a time given. It is remarkable that Dr. Davidson noticed that the expired air had much the same odour as that in the apartment in which the men had slept.

Upon examining the body of W. H., the muscles were found stiff, particularly those of the arm, and the whole surface of the body was pale. The lungs were

\* Medical Gazette, Oct. 16, 1846.

† Prov. Med. Journal, June 3, 1846.

‡ April, 1847.

gorged with dark blood, and the trachea and bronchi were filled with a frothy sanguineo-serous fluid. The lungs had a solid feel when cut into. The right side of the heart was filled with dark fluid blood, and the heart itself seemed to be smaller and softer than natural. All the blood was black and fluid. The stomach was a little more injected than natural, and contained air and some porridge which he had taken for supper. All the other organs were dark-coloured and highly congested, but healthy. Dark patches were seen in the mesentery, and the omentum was of a dark colour. Upon removing the scalp a large quantity of blood flowed from each incision. The sinuses, diploë, and the dura mater were highly congested. Upon the superior and posterior aspect of the brain there was considerable subarachnoid effusion, but at the base little. The circle of Willis and the spinal veins were filled with blood. The whole substance of the brain presented innumerable red spots when cut into. About one drachm of serum was seen in each lateral ventricle, and a small quantity was found also in the third ventricle. The cerebrum was healthy, but the cerebellum very soft, so as to give way in all directions upon being slightly pressed with the fingers. The whole spinal cord was softer than natural, but no effusion of blood was found in any part of it.

The most remarkable part of this case is the death of one man, while the other survived. Both men were about the same age, and equally exposed to the vapour of the poison, and yet it proved fatal to the one and not to the other. The fact that the deceased went to bed a quarter of an hour before the other will scarcely account for the different result.

From the state of the porridge found in the stomach of W. H., which appeared to have undergone no change, Dr. Davidson concludes that the gas paralyzes the activity of the stomach, and destroys or retards the function of digestion. This view would appear to be borne out by the statement of Dr. Beaumont, that, under ordinary circumstances, porridge is digested in one to two hours. It would also appear that A. M., soon after his removal from the room, vomited up some porridge, which appeared unaltered.

From the position of the thumb and the fingers, Dr. Davidson is led to consider that the gas tends to excite cerebral irritation. "This particular state," he says, "is pathognomonic of cerebral irritation and effusion, and is constantly met with and regarded as a fatal symptom in the hydrocephalus of children and infants." In fact, he states that he never saw a fatal case of this kind unaccompanied with this symptom.

[Though the above case has been described by Dr. Davidson as one of poisoning by carbonic acid gas, death cannot be considered as entirely due to that gas, for coal vapour is a compound containing, besides carbonic acid, large quantities of sulphuretted hydrogen, carburetted hydrogen, and sulphurous acid gas; all of which produce serious and fatal effects in those subjected to their action.

It is also worthy of remark that death occurred in the above case without any degree of suffering, if we may judge from the state of the countenance and the condition of the bedclothes, while in many other recorded cases the features were bloated, livid, and distorted, as if indicating that the last moments were not free from pain.]

30. *Diffusion of Carbonic Acid Gas generated by Respiration.* M. Lassaigne, Professor of Chemistry at the Royal School of Alfort, has performed a great number of experiments, in order to determine whether carbonic acid generated in crowded rooms really occupies the lower strata of the air, or whether it becomes diffused throughout the atmosphere generally. M. Leblanc had previously stated that in the theatre of the Opéra Comique the air in the upper regions contained  $\frac{1}{10000}$ th of carbonic acid, while that in the pit contained  $\frac{2}{10000}$ th. But as another source of carbonic acid was here present (viz. the gas and candles) besides the products of respiration, M. Lassaigne examined the air of a lecture-room not exposed to these sources of contamination. His conclusions are—1, that in close places, where the air has served for respiration, the carbonic acid gas exhaled is not confined to the lower parts of the room; 2, that the carbonic acid is found almost equally diffused throughout the whole of the air; 3, that the slight differences observed in this respect rather led him to believe that the quantity of carbonic acid was more



considerable in the superior regions; 4, hence the necessity of renewing the whole body of air.\*

## § II.—*Personal Identity.*

31. *Personal Identity—in the Dead.*—A case showing the difficulties of establishing identity in the dead occurred in France, during last year, in the Department of Seine and Oise. The body of a female was found buried in the wood of Villot, near Cermeilles, and bore all the marks of death having resulted from suspension. It was supposed to have been the corpse of a woman, aged 31, who had been missed from the neighbourhood for some time. The body was in an advanced stage of decomposition, so that it was difficult to ascertain her age with any certainty. Some witnesses stated that the woman could not have been more than 18 or 20, others 31, others 25; and those who held the first opinion founded it on the fact of the smallness of the uterus and the state of the lower jaw; and those who were for the more advanced age, on the state of the osseous system, and on the assumption that the party had never menstruated, or, if at all, only incompletely. The person whose body it was supposed to have been was an idiot; which fact might account for the small development of the generative organs. It was equally difficult for the medical witnesses to state how long the body had been buried. Some, considering the nature of the soil, the time of the year, and the depth of the grave, allowed six weeks; others, two months; others, even six months as the limit.†

32. *Personal Identity—in the living—Can Cicatrices become obliterated?*—The medical man is occasionally called upon to prove the identity of a party by the presence or absence of certain marks on his person. This happened in the following instance, which involved the question whether it was possible for cicatrices to become obliterated.

An Englishman named D— was condemned, in 1828, to ten years' imprisonment in the prison of Petits Carmes de Bruxelles. After a time he obtained his release, on condition that he would quit the country forever; but before he was allowed to depart, M. Vandelaer, the physician to the prison, had remarked on one of his shoulders a cicatrix, which the prisoner attributed to a burn. Soon after his release he committed forgery in France, and was pursued, it having been found that he was residing at Brussels under an assumed name. The government of France demanded him to be given up; but having denied that he was the party wanted, he was sent to Brabant to be identified. The servants of the prison where he had been confined formerly, thought that they recognized the accused, but no one could swear to the identity. M. Vandelaer was called upon to examine him, and upon doing so was unable to recognize the scar which he had previously observed. He stated that it might have been removed by time or artificial means, and that consequently its absence was not a proof of non-identity. M. Lebeau and M. Limanges differed as to the possibility of the mark being removed. M. Vandelaer was supported, moreover, in his opinion by the physicians of the prisons at Vilvorde and Ghent, who stated that prisoners were in the habit of removing cicatrices by applying a salted herring to them (!) The prisoner was convicted and punished.‡

[The Belgian physicians, if Messrs. Vandelaer, Lebeau, and Limanges may be taken as fair specimens, seem to have exhibited an unusual amount of credulity in supposing so simple an application as the above capable of removing a cicatrix. Indeed a true cicatrix, the result of loss of substance, is, according to observation and from the very nature of things, incapable of absorption. It is barely possible that M. Vandelaer may have been deceived in the first instance as to the existence of a true cicatrix.]

33. *A Prisoner identified by a Wound.*—The following curious particulars are abstracted from a Medico-legal Report, by Dr. Victor Lemoine.

During January, 1846, a robbery was committed at Stigny in a house inhabited by two old men. The next morning, when it was discovered, several spots of

\* Annales d'Hygiène, Oct. 1846.

† Gaz. Méd., Jan. 1847.

‡ Gaz. Méd., Mars 27, 1847.

blood were found on the floor on the left of a chest of drawers, which the robbers had forced during their depredations. Moreover, other spots of blood were found following the direction taken by the robbers when they quitted the house; they were apparent from the fact that a quantity of snow had fallen the night before. In every case the blood was on the left hand side of the footsteps. Besides these, a shred of membrane was found in the same course, which was stated, after an examination, to be a portion of skin. Hence it was clear that one of the robbers had been injured; and after a search had been made through the neighbourhood, a man named B. was found with his hand wounded. Dr. Lemoine and M. Cœurderoi were appointed to examine the suspected man, and they both agreed that the wound (and it was on the left hand) was probably inflicted about the date of the supposed robbery, and that the piece of skin, which had been found, judging from its dimensions and shape, had formerly covered the injured part. The accused, after a confinement of two months, confessed the crime, and was afterwards condemned to two years' imprisonment.\*

### § III.—*Rape.*

34. *Seminal Spots.*—M. Legrip was commissioned to examine some spots on the chemise of a girl upon whom an attempt at rape had been committed. A large, irregular, yellowish spot was found on the front of the chemise, of a more intense colour on the interior of the dress than on the exterior. It moreover, communicated a sense of stiffness to the linen, which was not noticed elsewhere. The spotted portion of the chemise was divided into two portions. A smaller portion was subjected to a moderate heat, and the colour was heightened: the other portion was placed in water of the temperature of 75 (Cent.). On being removed from the water and submitted to pressure it exhaled the odour of semen. The smaller portion was then infused in cold water, and gave the same results. The two aqueous solutions were then mixed, and assumed a white, troubled, mucilaginous appearance, exhaling in a less degree the seminal odour. A slight flocculent deposit fell when the fluid was allowed to stand. When examined by the microscope no entire spermatozoa could be detected. The liquid was then filtered, and a portion was treated with iodine, to prove the absence of starch. The remainder, when concentrated by evaporation, yielded a dry mucilaginous mass, which, on being treated with cold water and filtered, was submitted to the following tests: 1. Alcohol; which rendered it turbid. 2. Chlorine; this caused a milky appearance. 3. Acetate of lead; which threw down a clotted precipitate. 4. Chloride of mercury; this caused a white precipitate. 5. Infusion of galls: which gave an abundant grayish white precipitate. 6. Nitric acid; which caused no change.

A portion of the linen, free from spots, was then submitted to the same tests, but with negative results.

M. Legrip concludes that the spots were those of semen, although he did not succeed in detecting any of the spermatozoa under the microscope.†

### § IV.—*Pregnancy.*

35. *Supposed Pregnancy.*—Marie Madoin, in service, supposing herself pregnant, applied to a midwife in the Faubourg St. Denis for the purpose of procuring an abortion. The midwife, after an examination, considering her pregnant, introduced into the uterus some sharp instrument, the application of which was followed by a slight effusion of blood. This took place on the 30th of April, 1845, and on the 1st of May she was seized with pain, and all the symptoms of an approaching miscarriage. She confessed her crime, and the midwife was arrested. Dr. Bayard was then called upon to examine the girl, who considered herself as arrived at the fifth month of pregnancy. He reported that the size of the abdomen was considerably augmented. The neck of the uterus was pyriform and thin. The body of the uterus was not at all enlarged, but that there was connected with it a tumour of the size of a fist, of a hard and resisting character. He was unable to

\* Annales d'Hygiène, Janvier 1847.

† Gaz. Méd. de Paris, March 1847.

detect either the placental bruit or the sound of the fetal heart, and no ballotement was evident: all of which must have been present had the girl been pregnant, as she thought. From this examination he concluded that she was not pregnant; and at an after period, he found a large ovarian tumour, in the cavity of the pelvis. The girl was acquitted, but the midwife was subjected to punishment.\*

36. *Protracted Gestation*.—As the possibility of prolonged utero-gestation can only be established by the publication of well-authenticated cases, Dr. Sewell, of Quebec, has been induced to record the following:—A lady, Mrs. B., menstruated for the last time on the 5th of October, 1841, and in November (about the time the catamenia should have appeared) suffered from morning sickness and toothache. From this time the breasts became enlarged, and the areola increased in size, and became darker. She then declared herself pregnant, and was delivered on the 2d of September, 1842, of a female child. Now, if in this case we follow the usual rule, and count from the mid-period, between the last catamenial period and the time when the menses should have appeared again, we shall have 318 days or  $10\frac{1}{2}$  calendar months, as the duration of pregnancy. For, if she were unwell on the 5th of October, the menses would probably have ceased on the 10th; and allowing fifteen days as the half of the interval, we shall be brought to the 25th of October, from which to the date of delivery is a period of 318 days. "But if we suppose impregnation to have occurred on the 4th of November, or the day preceding that on which the return of the catamenia was looked for, even then gestation must have extended over 307 days, or twenty-seven days beyond the usual forty weeks."†

[There is here some error of calculation. When properly reckoned the duration of pregnancy, according to the first supposition, is 313 days, and according to the second supposition 303 days. If, instead of allowing 15 days for the half interval, we reckon 13 days, which is half a day more than the number of days between October 10th and November 4th, the 313 days are reduced to 311. In any case, however, we have probably an example of protracted gestation.]

The American courts of law allow the possibility of gestation being prolonged even to 313 days. This was decided in a trial, which took place in the county of Lancaster (America), and in which the prosecutrix swore that she had connexion with the father of the child on the 23d of March, 1845, and that she never had connexion with him (in fact never saw him) or with any other man after that date. The child was born on the 30th January, 1846. The judge directed the jury to record a verdict for the prosecutrix.‡

37. *Superfotation*.—The following case is abstracted from the "*Revue Médicale*,"§ and occurred under the observation of M. Monnier. On the 2d of March, 1846, a woman, aged 32, was delivered of a dead child, which had all the characters of maturity. Nine hours afterwards she gave birth to a second child which had the appearance of having arrived at the fifth month and a half of gestation. The umbilical cord and placenta, with the membranes, were well formed. M. Monnier has neglected to state the measurements and weight and other characters of the last child. In all probability it was a case of twins, the product of the same conception, but unequally nourished. -

#### § V.—Delivery.

38. *Unconscious Delivery*.—Mr. H. G. King,|| of Hackney, has recorded two cases of this kind. The subject of the first, a female 36 years of age, and the mother of nine children, six of whom are now living, was delivered of a seven months' child during a prolonged hysterical paroxysm. "Both mother and child did well, and are living now, she having no recollection of the birth, nor of any matter connected with the event, nor did she manifest any uneasiness or sign of pain during the expulsion of the child and placenta."

"The second case was a female of about 28 years of age, the mother of two children, both living; this was consequently the third accouchement, nothing particular occurring in the former labours. I was hastily summoned to this lady, who

\* Annales d'Hygiène, April 1847.

† Brit. Am. Journal, Feb. 1847.

‡ Medical Examiner, June 1846.

§ Juillet 1846. || Med. Times, May 15, 1847.



had expressed great uneasiness lest I should not be in time. On entering the room, I proceeded to the bedside to assure my patient I was at her service; she spoke and acknowledged the attention, and shortly relapsed into a state which appeared like sullenness; she was lying on the left side, but in a position I wished to improve, and to my repeated directions so to do she paid not the slightest attention. The uterine action continuing for about twenty minutes, a healthy infant was born, and shortly after the placenta came away. This event had scarcely happened, when my patient, looking up, expressed her astonishment at hearing the infant cry; she could hardly be persuaded that it was born, assuring me that she had no knowledge of the event. I had noticed her head huddled in the bedclothes, and supposed it intended to stifle any manifestation of pain; she became perfectly conscious, had no interruption to her recovery, and still declares that the birth of this child is a blank in her memory, and was quite unknown to her. I was unable to account for the loss of sensorial power here, but after some months epilepsy supervened, and revealed the mystery."

#### § VI.—*Infanticide.*

39. *Infanticide and concealed Delivery.*—A widow, aged 40, in service, was suddenly taken in labour, and Dr. Sewell being sent for, after an examination per vaginam, found the membranes protruding and the head presenting. She had all along denied her pregnancy, and still continued to do so in the most solemn manner. She was removed to the hospital, and soon gave birth to a child which survived a few hours. Upon removing the placenta there were found attached *two* cords. This circumstance led to an examination of the patient's room, which bore marks of a recent delivery having taken place, and in her trunk the body of a male child was found. From the appearances present, Dr. Sewell was led to believe that the child had breathed freely, and that it had been strangled, an inference borne out by the protrusion of the tongue and the position of the hands. She was convicted for concealing the birth of an illegitimate child, and sentenced to six months' imprisonment.\*

40. *Injuries intentionally inflicted or caused by Labour.*—The observations of Klein have shown that death or severe injury rarely happens to the child during sudden labour; for out of 180 cases collected by him of parturition occurring in the standing, sitting, or inclined position, there was only one instance where the child was killed, and none where the bones of the head were fractured. But though accidents from this cause are rare among legitimate children, Dr. Cohen von Baren, of Prussia, has observed that they are more common among illegitimate children, as the mothers are more frequently taken suddenly in labour in an unfavourable posture, and that slight accidents in these cases are also more frequently followed by death. Of 50 cases reported by him, 30 children were born while the mother was standing, 17 while stooping or sitting, and 2 while kneeling. Of these 50 children, 32 were first-born, and 42 were born at full term; 10 were premature, and of these 7 were above thirty weeks. Of 19 born in the standing position, only one had fracture of the skull, and this was probably caused by laying a heavy stone on the child's head, as it dropped on soft turf; in 10 of them no ecchymosis was discovered; and in 1, in consequence of the dragging of the abdomen, from the shortness of the cord, there was rupture of the liver. In 25 cases the cord was ruptured, in 7 the placenta came away with the uninjured cord, and in 3 this point could not be ascertained. Of the 25 cases of rupture of the cord, 11 presented ecchymosis, 5 fractures or fissures of the cranium, and 1 rupture of the liver. From these observations, combined with those of Henke and Klein, the following propositions are deduced: 1st. That a fall on the ground may cause to the child dangerous injuries, and, in very rare instances, death. In illegitimate children, too, trifling injuries may be of more consequence than in those born in wedlock. 2d. That sudden parturition is more common in persons who wish to conceal their pregnancy than in others, and that among unmarried women it occurs chiefly in first births. 3d. The assumption that the tediousness of labour is the cause of the injuries observed on the heads of new-born children is, generally

\* Brit. Amer. Journ. of Med. and Phys. Science, July 1846.

speaking, unfounded. 4th. The unusual conditions in which the mothers of illegitimate children bring forth, render very slight contusions, concussions, and extravasations, occurring during labour, unusually dangerous. 5th. That in three out of four children born in an unusual position, the cord was broken by the act of parturition itself. 6th. That injuries to the head may be occasioned by the fall, especially if the ground be hard or stony—a point that in these cases should always be attended to. 7th. That the integrity of the cord is a preventive of such injuries, and therefore that their occurrence, the cord remaining entire, is most probably to be attributed to intentional violence. 8th. That in labour in an unusual position the cord is often ruptured; and that, in these cases, the placenta rarely remains in connexion with the mother, and that still more rarely both placenta and child come away together with the cord entire. 9th. That illegitimate show a less degree of physical development than legitimate children.\*

The following cases serve as an appendix to the above conclusions. A young girl was delivered clandestinely, but being suspected of having committed infanticide, she denied both her pregnancy and her delivery. She was examined; and as it was ascertained that she had recently been delivered, she then confessed the fact, but added that the child was still-born, and that she had buried it. Upon inspecting the body it was ascertained that it was born at full term, and had lived. There were flattening of the cranium in the transverse direction, and sanguineous effusion in the cellular tissue, which occupied the two parietal regions, and was less marked at the vertex and posterior parts of the head. This was stated to be cause of death. From the account given this might have been the result of long and difficult labour, but the accused denied that such had been the case; and, to explain the appearance, she pretended that the flattening might have been caused by the stones which she had placed upon the body in burying it. The ecchymosis, however, proved that it had taken place during life. As the medical witness seemed to think that it was not absolutely shown that the lesions might not have been the result of labour, the court referred to the jury the question of homicide by imprudence, which was affirmed.†

The other case runs thus: Mrs. B., aged 30, married and pregnant with her first child, was seized during the night with labour-pains. Being a refugee from the late fire at Quebec, she occupied part of a garret, in which two or three young men were also sleeping. She suppressed her cries until morning, when she descended to a lower apartment, where she detailed her symptoms to an old woman who lived there, and requested, at the same time, that some warm water might be given her, to sit over, to relieve a great pressure at the lower part of the bowels. She had scarcely seated herself on the edge of a rather high chair, when a severe pain seized her, and, before any assistance could be given (though two or three women were in the room), a child was forcibly expelled, and fell head foremost on the floor, being killed on the spot. The reporter of the case was sent for as soon as Mrs. B. had descended into the lower apartment, but did not arrive until twenty minutes after the delivery. The child was still attached to the placenta by the cord.‡

[Though death, in the first instance above quoted, was almost certainly the result of crime, and was caused by the injuries inflicted by the mother during the life of the child, yet "the second fully justifies the reserve manifested in the former case." For in it we have a clear proof of the possibility of death occurring from sudden parturition; which fact should render the medical witness very cautious in all medico-legal investigations of this kind, lest his evidence, hastily given, or founded on too cursory an examination of the case, might cause the verdict of wilful murder to be unjustly recorded against the unfortunate mother.]

A charge of infanticide was brought against Helen and Jean Frith, in the Circuit Court of Justiciary at Ayr, on the 13th of October, 1846.§ Helen Frith, an unmarried woman, was apprehended, about the 1st of July, on suspicion of having given birth to a child, which she had destroyed, and her mother, Jean Frith, as accessory. The evidence adduced was conclusive as to her pregnancy,

\* *Prov. Med. and Surg. Journal*, June 3, 1846.

† *Gaz. Méd. de Paris*, and *Prov. Med. Journal*, April 1846.

‡ *Brit. Amer. Journal*, and *Prov. Med. Journ.*, April 1846.

§ *Month. Journ. of Med. Science*, Nov. 1846, and *Med. Gaz.*, Nov. 20, 1846.

and left little doubt that she had been delivered on the morning of Saturday, June 27th. This latter circumstance, moreover, was confirmed by a medical examination. A fortnight after this the body of a child, tied up in a striped bag, and in an advanced stage of decomposition, was found, buried in the sands, at some little distance from the house of the accused. The identification of the infant, of course, mainly rested upon the identification of the bag in which the child was found; but no witness could positively swear that it was the property of the prisoner, though many were certain that it exactly resembled one that had been in her possession, and used as a cover to a cushion. Two questions then arose, viz. whether the child had been born alive, and whether it had died a violent death. Dr. Crawford and Mr. Mitchell made an examination of the body of the child, and gave a written report, of which the following is the substance. The body was that of a female child, in a state of putrefaction with desquamation (?) of the cuticle. It weighed five pounds, and was twenty inches in length. Its mouth and nostrils were stuffed with flax. The umbilicus was in the centre of the body, the cord cut close to the abdomen, and left without a ligature. The scalp was covered with hair, and the nails were full grown. There was an extensive ecchymosis all over the fore part of the neck, and an effusion of blood on the exterior aspect of the trachea. The heart and lungs weighed one ounce. The lungs were collapsed; the right, being considerably decomposed, sank in water. The left, which was of a red colour, and firm texture, floated: but on pressure there was no crepitation. The right side of the heart was filled with coagulated blood, *the foramen ovale partly open, and the ductus arteriosus imperforatus*. The liver was large, and of a leaden hue, *the ductus venosus almost obliterated*, and the meconium found in abundance in the lower bowels. The report concludes with the expression of an opinion that, from the perfect conformation of the child's body, and the appearances detailed, it had life at birth, and that those appearances were quite sufficient to account for death.

It further appeared that the introduction of the flax into the nostrils could not have been the result of accident, as it required some degree of force to withdraw it. This, coupled with the appearances on the neck and trachea, led the examiners to conclude that death was due to suffocation. As to the closure of the ductus arteriosus, they admitted that it generally required some days to effect it, but that in one case, mentioned by Billard, it was closed in twenty-four hours. It was stated, moreover, that, judging by the appearance of the ecchymoses, they could not have been the result of violence applied after death, nor of the application of the mother's hand during delivery. Dr. Haldane, the medical witness called for the defence, stated that, from the appearances described by the medical examiners in the arterial and venous ducts, he would have inferred that the child had lived at least twenty-four hours. He also stated that ecchymoses might be caused after death, which could not be distinguished from those produced during life. But the evidence failed in one or two important links, and a verdict of not proven was recorded.

This case involves several questions of great interest; among which the most important is the possibility of the ductus arteriosus being closed from other causes than the establishment of respiration. There is little doubt that the child found buried in the sand was the child of Helen Frith, and it must be admitted that the evidence established a strong presumption that either she or her mother had destroyed it soon after its birth.

There are one or two points of the medical evidence on which we would offer a few comments. The first is the maturity of the child. Upon this point, the evidence must be admitted to be conclusive. The weight, lessened as it was by the loss of a portion of the brain, and possibly by hemorrhage from the cord, was 5 lb., which is less than half a pound below the average for the female infant at full term; and the length (20 inches) exceeds the average by half a foot. The position of the navel at the centre of the body, the scalp covered with hair, and the nails full grown, confirm these strong probabilities, so that there can be no reasonable doubt that the child was mature. The next point which invites attention is the condition of the lungs. They were unusually light, for the heart and lungs together are stated to have weighed only *one ounce*! Formerly this circumstance would have been held to militate strongly against the probability of live birth; but recent



inquiries have corrected this error, and shown that a low weight of lungs affords no presumption in favour of still-birth. The lungs were *collapsed*, a condition which is compatible with the supposition either of no respiration or of imperfect respiration. The right lung was *considerably decomposed, and sank when put in water*, which, presuming the lung to be healthy, proves either the absence of respiration, or respiration so imperfect as not to render the lung buoyant. The left lung, which was of a *red colour and firm texture, floated, but did not crepitate on pressure*. The buoyancy of this lung could only have arisen from one of three causes—respiration, inflation, or putrefaction. A strong presumption against the last of these causes is afforded by the fact that the right lung, though *considerably decomposed*, sank when placed in water, and the absence of crepitation on pressure, and of any statement that the lungs sank after being submitted to pressure, confirms this presumption. We are, therefore, bound to adopt the other alternative, viz., that the buoyancy was due to respiration or inflation, a view of the case which is strengthened by the *red colour* of the lung. It is to be regretted that the description given of the appearance of this lung is not more detailed; but the buoyancy and the colour taken together, added to the very slight probability of artificial respiration having been practised in such a case, leaves little room for doubt that the child had breathed, while the absence of crepitation shows that the respiration was very imperfect. But admitting that the child had breathed, there is certainly no evidence in the state of the lung itself that the child was born alive, for so imperfect a degree of respiration might have happened before the complete separation of the child from the mother. The circumstance which induced the examiners to pronounce that the child had life at birth was, *the extensive ecchymosis all over the fore part of the neck, and an effusion of blood on the exterior aspect of the trachea*, appearances which, in their judgment, could not have been produced during delivery, or *after death*. Upon these two points, but especially the last, the evidence is a little too confident, although it must be confessed that these appearances, coupled with the swelling of the mouth and nostrils, justify a very strong presumption in favour of criminal violence inflicted on a living child.

From the appearances observed on the body and in the lungs of this child, it may be inferred, as in the highest degree probable, that it was born alive, that it survived its birth a short time. (probably a few minutes, possibly, judging from certain portions of the evidence, for any period less than five hours,) and that it fell a victim to strangulation and suffocation. Taking all the circumstances of the case into consideration, the most probable supposition is that the child had only survived a few minutes at the most, and yet the *foramen ovale was partly open, the ductus venosus almost obliterated, and the ductus arteriosus imperious*, a state of things contrary to received opinions, and at variance with the interpretation put upon the observations of authors. The author who has made the most precise observations on the subject of the obliteration of these openings, is M. Billard, who was quoted by the medical witnesses. On referring to his "*Traité des Maladies des Enfants*," p. 321, it will be seen that in two out of 19 infants of one day old the *foramen ovale* was partially, and in two completely closed. The *ductus arteriosus* was partially closed in four infants of the same age, and in two others completely obliterated. The *ductus venosus* was free in all. Now, it seems to have been somewhat hastily assumed that under the title of "*enfants d'un jour*," Billard included only those infants who had lived twenty-four hours; whereas, in all probability, this class comprised all infants who had survived their birth twenty-four hours or less. It is, therefore, quite within the bounds of possibility that some of these infants, in whom the foramen ovale and the ductus arteriosus were partially or completely closed, might not have survived their birth more than a few hours. If the term *imperious*, applied in this case to the ductus arteriosus, be intended to imply an obliteration of its cavity by adhesion, such a state must be admitted to be inconsistent with so short a survivorship, but if it mean merely a complete contraction of the duct, so as to reduce it to a very small size, such contraction must be admitted to be at least possible: for, according to Berni, respiration during only a *few seconds* will lead to the contraction of the aortal extremity of the duct, while respiration during *several hours or a whole day* will reduce the whole length to the diameter of a goose's quill. As Berni's description is obviously general, and represents an average state of things, a more rapid contraction of the whole duct must be

admitted to be at least possible. In a præparation exhibited at one of the meetings of the Pathological Society of London,\* by Dr. Norman Chevers, the *ductus arteriosus* of a fœtus of seven months and a half, which had survived its birth fifteen minutes, was found almost closed, being but one-twelfth of an inch in diameter, and capable of admitting only the shank of a large pin, its coats exceeding in thickness those of any other of the large vessels; the interior of the vessel was rugose, and presented a series of small pits. The contraction of the vessel was uniform. The pulmonary arteries were wide and well developed, equalling the size of the same vessels in a full grown fœtus. Dr. Chevers is reported to have expressed it as his opinion that the closure of the duct commenced and might have been entirely accomplished before birth had the child lived to the full period. The state of the lungs and the degree of the respiration is not stated, but it must be admitted to be at least possible that this contraction may have taken place entirely after birth, in consequence of the very rapid and complete establishment of respiration. On the other hand, the anomalies sometimes met with, and even the occasional absence of the duct, would prepare us to expect considerable deviations from the ordinary course of nature, and will give some countenance to the opinion that in the case now under consideration the closure of the duct was abnormal and congenital. But the difficulties that beset this supposition are very great, when we reflect on the peculiarities of the fœtal circulation and the special uses of the arterial duct.

Similar difficulties attend the question of the closure of the foramen ovale where that opening is found obliterated soon after birth. A remarkable case of such premature closure of the foramen ovale was related by Mr. Smith at an earlier meeting of the Pathological Society of London, held December 7th, 1847.† The infant lived only sixteen hours, and died comatose. Upon examining the body, twenty-four hours after death, the fossa ovalis was seen in the right auricle in its natural position, but closed by a strong reticulated membrane, firmly attached to its distinct annulus, impervious, and pouched. There was also a mere vestige of the Eustachian valve. In the left auricle the membrane covering the fossa ovalis was also quite impervious. The mitral valves were defective in structure, and the walls of the right ventricle hypertrophied. The left heart and the aorta were contracted in size. Here, then, as stated by Dr. Chevers, it is clearly proved that "a closed foramen ovale is not a proof in jurisprudence that a child has lived, for in this case it was clear that the occlusion must have existed long before birth." The præparation is deposited in Guy's Hospital. If we admit in this case the impossibility of the valve becoming closed in sixteen hours, we must not forget that the heart was otherwise malformed, and that we, therefore, have no evidence that such closure of the valve is possible in a heart of normal formation. The writer has himself met with an instance in an immature still-born fœtus with a heart of normal formation, of a foramen ovale so far departing from the usual formation as to be divided into two by a horizontal band of membrane.

The whole subject of the closure of the fœtal orifices, as signs that a child has survived its birth for a shorter or longer period, is opened up by this trial, and deserves to be carefully examined by those who enjoy favourable opportunities of examining the bodies of the fœtus and infant.

#### § VII.—*Feigned Diseases.*

41. *Application of Ether.*—M. Baudens has employed ether vapour in two cases where the individuals were suspected of feigning disease to avoid the conscription. In the first there was projection of the back, with apparent deformity of the spine. He was made to inhale the ether, and when complete relaxation of the limbs occurred, the supposed deformity disappeared. In the second case the person was thought to feign anchylosis of the hip-joint. Relaxation of the muscles was found to occur under the influence of the ether vapour, but on examination the anchylosis remained as strongly marked as before the experiment: thus proving the reality of the disease.‡

\* Lancet, Jan. 30, 1847.

† Med. Gazette, March 19, 1847.

‡ Med. Gazette, Dec. 1846.

§ VIII.—*Sudden Death.*

42. *Suspicion of Poisoning.*—The following case is narrated by Mr. Robins.\* The deceased, who had not long been married, had just become pregnant for the first time. She had always had good health, but was slightly anæmic. On the morning of the 30th of December, 1845, after getting out of bed, she fell, and after asking for a glass of water, uttered three loud screams, and died almost instantly. She was dead upon the arrival of Mr. Robins, who was afterwards required by the mother to make a post-mortem examination, as she entertained suspicions of poisoning by the husband. The organs were healthy, but gorged with blood (except the kidneys), and the heart and large arteries were almost empty. The only peculiar appearances found in the body consisted of a deep red or purple colour of the mucous membrane of the smaller curvature of the stomach: the rest of the mucous membrane being natural. The contents of the stomach were tested, but unsuccessfully, for oxalic acid, corrosive sublimate, and arsenic. The coroner's court returned a verdict of death from natural causes.

[It is clear that almost the only poison likely to have caused death so suddenly is prussic acid; but the contents of the stomach were not tested for that drug. Had prussic acid, however, been the cause of death, it would probably have been taken in so large a dose as to have been immediately recognized by its odour. It seems that the state of the stomach led some parties to suspect poisoning by arsenic; but the appearances presented by the stomach after death in this case are so constantly met with, even independent of disease, that the absence of poison ought not to excite much surprise. The cause of the death remains very obscure.]

§ IX.—*Strangulation.*

43. *State of the Blood.*—It has been observed by M. Cicerone, that in all cases of death from asphyxia, the quantity of fibrin in the blood is diminished, and that after the respiratory movements have ceased, circulation of the blood still continues for some time. Hence he was led to infer that in those cases in which respiration is stopped by the application of a cord round the neck, and in which the return of blood to the heart is at the same time prevented, the circulation of blood through all other parts of the body below the cord, and the conversion of arterial into venous blood still continuing (though imperfectly) to take place, the blood accumulated in the jugular veins would be in its natural condition, whilst that in all other veins below the constricted part of the neck would have suffered a diminution in the quantity of its fibrin. Similar differences in the blood would not be noticed in cases where a cord had been applied after death. To test the accuracy of this view, M. Cappa has experimented on hens; he strangled ten, in six of which death took place by asphyxia and apoplexy, in two by asphyxia alone, and in two by apoplexy alone. In the last cases the blood in the jugular veins presented the globules distended, and the nuclei broken up or elongated; but they were healthy in the blood taken from all the other parts of the body. But the reverse was the case where death took place from asphyxia alone. In the six other cases the same appearances were seen throughout the body. In death from apoplexy alone, the blood in the jugular veins above the ligatures was thicker, and contained more fibrin; but the reverse was the case where death occurred from asphyxia. This test, therefore, would be available only in death from apoplexy, and not in the more frequent cases where it results from both apoplexy and asphyxia.†

[It does not appear that any comparative experiments were made; but the omission is not of much importance, as the test does not promise to be of any practical utility.]

44. *Strangulation: was it homicidal or suicidal?*—A man was found dead in a loft, and his wife was accused of having murdered him. She denied the fact, and stated that he had committed suicide. Upon examining the body there was an

\* Lancet, July 1846.

† Heller's Archives, Heft 2, 1846; and Med. Gaz., Dec. 1846.



ecchymosed trace of a cord round the neck, but nothing was found near the body by which strangulation could have been effected. The hypothesis of suicide was therefore rejected. The impression of the cord was not horizontal, and existed only in front of the neck; hence it was concluded that the strangulation had probably been effected by the violent pressure of a cord held in front of the neck, while the man was lying on his back. As the body had sustained no other injury, it could not be supposed that death had happened from any other cause. Suicide by strangulation is a comparatively rare event, so that the presumption is always in favour of homicide.\*

#### § X.—*Suffocation.*

45. *Suffocation without External Marks of Injury.*—A body was found floating on the surface of the river Oise. When taken to shore it was recognized as that of a girl, L., who had lived in concubinage with a man named C., since accused of the murder. The body seemed to have been roughly dressed, in order to be thrown into the river, and other circumstances appeared to point to death by violence. A post-mortem examination determined that she had died before submersion. What, then, was the cause of death? for no trace of violence was found upon her. The brain, lungs, and liver were congested, and there were no traces of poison. Three theories were started by the medical men of Clermont, in order to account for death—drunkenness, asphyxia, and submersion. M. Devergie was called to give evidence, and he stated that drunkenness was improbable, as she was known not to be in the habit of drinking. The idea of death by submersion was inadmissible, for the accused, C., was seen carrying the body to the river. He therefore considered, from the appearances on the body, that death was due to asphyxia; but he could not state by what means suffocation was produced, though he considered that this kind of death might be produced by a criminal hand, without leaving any external marks, an opinion which is fully borne out by the cases of Margery Campbell and Carlo Ferrari. The jury then recorded a verdict of guilty against the prisoner.†

#### § XI.—*Wounds.*

46. *Contused Wounds: Is Ecchymosis always the result of Violence?*—As this question is very often asked of a medical witness in courts of law, it may be as well to state that contusions and kicks are often followed by fatal consequences, although they give rise to no external indication of violence. Dr. Wharrie has lately communicated one or two cases which are not without interest, as they tend to show the necessity of a post-mortem examination in all suspicious cases of this kind. This observation applies particularly to the abdomen, since its parietes are so elastic, and yield so readily to the impinging force, that a violent blow might be received, and yet no ecchymosis be produced, though the death of the patient be caused by rupture of an internal viscus or by inflammation consequent upon the violence. In the first case (Sept. 1837) a man, while in a state of intoxication, kicked his wife on her belly, and she died a few days afterwards. After death no ecchymosis was found on the abdomen, though its cavity exhibited marks of recent inflammation, and blood was extravasated in the fibres of the rectus muscle, near the umbilicus. In the second case, a woman was kicked by her husband, and died soon after, with all the symptoms of peritonitis. The appearances after death were very similar to those in the last case, and there was no external mark of violence on the abdomen, though blood was extravasated between the muscles and peritoneum to the extent of about four square inches.

Rupture of the liver and effusion of blood into the abdomen may also occur and be followed by death without any external marks of violence being apparent, as proved by Dr. Wharrie. These cases strongly enforce the necessity of post-mortem examinations for medico-legal purposes.‡

\* From Gaz. Méd. de Paris, and Dublin Med. Press, Aug. 1846.

† Gaz. Méd., Mai 1846, and Month. Journ. of Med. Science, June 1846.

‡ Month. Journ. Med. Science, May 1846.

## § XII.—Burns.

47. *Whether produced before or after Death?*—The existence of vesications with the red line surrounding them were considered, on the authority of Dr. Christison, as characteristic of burns produced during life, but M. Leuret and M. Champouillon state that such is not the fact, and propose the following characters as the result of their observations:

"The only sign by which we can ascertain whether the burns were produced before or after death, is the appearance presented by the skin itself, on the removal of the epidermis. When produced after death, the dermis is of a dull white colour, its surface viscid, and there is a complete absence of sanguineous injection. When, on the contrary, they are the result of burns made during life, the dermis presents a high degree of inflammatory discoloration, which the application of cooling mixtures does not remove."\*

[M. Leuret has before shown that vesications containing a serous fluid may be raised on anasarcaous bodies after death by the application of heat, and though it may be admitted that the red line may be absent in some cases of severe burn, and, according to M. Champouillon, present in cases where the burn is formed on the dead body, yet the coexistence of these two signs is probably never found where the burn is produced after death.]

## § XIII.—Death by Lightning.

48. *Death by Lightning—Rigor Mortis.*—During a storm which occurred on the 5th of August, 1846, in the Canton of Levroux, a group of labourers was struck by the electric fluid. Four were killed on the spot, and five or six severely wounded. It was remarked that the individual who was most injured had worn a goat-skin. There were several lacerations about his body, and in three hours after his death it became as rigid as a bar of iron. In most of those struck the skin was reddened, but the clothes not burned.†

[It was formerly thought that in death from this cause the muscles remain relaxed, and never undergo the rigor mortis; but this case confirms the more correct opinion, that cadaveric rigidity may be as well developed after death from lightning, as where it had happened from some of the more common causes.]

## § XIV.—Death by Cold.

49. *Death by Cold—New Signs.*—A case of death from cold is narrated in the "Gazette Médicale," which was communicated by Dr. Stoehr, of Germany. It occurred under the usual circumstances. A man aged 38, of intemperate habits, on the night of his death had left a neighbouring village, where he had drunk freely and fatigued himself with dancing, with the intention of proceeding on foot to his own home. A heavy snow-storm was falling at the time, and a few days after he was found dead.

He was lying on his back, and masses of ice were found in his nostrils and ears. His body was completely frozen; there was no cadaverous odour perceptible; his arms and fingers were flexed, but his legs and feet completely extended. The membranes of the brain were congested, as well as the tissue of the lungs, and masses of ice were found in the ventricles and sinuses of the dura mater. The features were not at all collapsed, but preserved their colour and fulness, and the injection of the skin was even greater than it could have been during life, which latter circumstance was attributed to the impression of the cold, as those parts most exposed to it were the most heightened in colour, as, for instance, the face and back, which was reposing on the snow. No lesion was found on the body.

Dr. Stoehr therefore concludes, that among the signs of death from cold should be enumerated—1, the preservation of the fulness and colour of the features; 2, absence of all odour; (†) 3, congestion of the lungs and meninges of the brain.‡

\* Lancet, June 1846.

† Gaz. Méd., Août 1846.

‡ Ibid. May 2, 1846.

§ XV.—*Medico-Legal Trials and Inquests.*

50. *Poisoning by Arsenic.*—A father and mother were indicted for the murder of their child by the administration of arsenic. From the medical evidence, it appeared that at least four grains and one-tenth of arsenious acid were found in the body, there could, therefore, be no reasonable doubt that the child died from the effects of the poison. As the body of the child was in a state of decomposition when the examination was made, the effects of the arsenic on the stomach could not be ascertained, and as no evidence could be adduced as to the symptoms during life, the jury acquitted the prisoners. The medical part of the case is only interesting, inasmuch as the exploded notion of Orfila as to the existence of arsenic in bones and in the soil of churchyards was revived, and employed in the defence. The quantity found in the stomach of the child was quite sufficient to account for death, especially as the subject could not have been born a month.\*

A second trial for poisoning by arsenic is detailed at great length in the "*Annales d'Hygiène.*"† The accused had poisoned her husband, and had afterwards secreted the body. The body was found, and on examining the stomach and intestines, arsenic was discovered. It would appear, from the evidence, that the poison had been administered in small and repeated doses. The accused was found guilty of the crime.

One of the most interesting and instructive trials for poisoning by arsenic on record, took place at the Suffolk Lent Assizes, March 27, 1847, before Sir F. Pollock.‡ Catherine Foster was indicted for the wilful murder of her husband, John Foster. It appeared in evidence, that on the 17th of November, about three weeks after his marriage to the prisoner, he returned from his work in perfect health and in the best spirits, and partook of a supper consisting of dumplings, potatoes, and tea. The dumplings were made by the prisoner. He had no sooner eaten of his dumpling than he was taken violently sick, and obliged to go into the yard. Soon after this his mother-in-law, who had been out all day, came home, and found him retching violently in a basin, the contents of which she threw into a neighbouring ditch, near to which a hen and a brood of twelve chickens were in the habit of feeding. A fragment of the pudding, which was found by a neighbour, was given to the hen and proved fatal. The chickens were also poisoned by the vomited matters. During the whole of the night the poor man remained in great pain, and died at four o'clock the following morning. On the same day the hen and chickens all died, and a post-mortem examination of the body of the deceased was made, but without exciting suspicion. A further and more searching inquiry was subsequently deemed necessary by the coroner. The body was accordingly exhumed, and the contents of the stomach, the tissue of the stomach and duodenum, and the bloody mucus from the bowels, were taken to Bury, where they were subjected to analysis by Mr. Image, who unhesitatingly pronounced the presence of arsenic in great quantities, not only in these substances, but also in the crop of the hen and chickens, and in a pudding-bag which the prisoner had used to boil the dumpling of which the deceased had eaten the night before his death. On the other hand, the flour from which that used for the dumplings had been taken was found not to contain any arsenic. The prisoner was convicted. The chemical examination and the medical evidence were highly creditable to Mr. Image.

A fourth case of alleged poisoning by arsenic will be found reported in the "*Times*" newspaper, April 1, 1847. The accused, Elizabeth Johnson, who was the wife of the deceased, Henry Johnson, in spite of the proved purchase of arsenic, the discovery of the poison in the viscera, and many circumstances of a very suspicious nature, was acquitted.

51. *Poisoning by Bitter Almond Water*—A melancholy instance of this kind occurred during February, 1817, and was the subject of an inquest, at Camden Town. From the evidence given on that occasion it appeared that the deceased had died suddenly, after having swallowed the medicine that her medical attendant (Dr. Cronin) had prescribed. She had taken this medicine several times pre-

\* Med. Gaz., May 1846.

† Janvier 1846.

‡ Bury and Norwich Post, March 31, 1847, and Times, March 29.



vously without experiencing any bad effects from it, but on the last occasion the mixture had been prepared at a neighbouring chemist's according to Dr. Cronin's prescription. The chemist, not having any bitter almond water, procured from Mr. Bell, of Oxford street, some, which was possessed of great strength. This was employed in compounding the mixture, and caused the death of the deceased. It should be remarked that Dr. Cronin never defined the strength of the water, but employed it simply as a vehicle for the other medicines. The quantity of the mixture taken was above a table-spoonful and a half; and from analysis, it was calculated that one ounce was equivalent to sixty minims of prussic acid of the London Pharmacoporia. The bitter almond water supplied by Mr. Bell contained about five-eighths per cent. of real acid. This is a short outline of the facts, for which the reader is referred to the periodicals of the time. Dr. Cronin was committed and tried at the Central Criminal Court for manslaughter, and acquitted.

The unfortunate occurrence was evidently due to a mistake on the part of the chemist in employing such a strong preparation of bitter almond water, when from the prescription, it was evident that a very weak one was intended. Great blame, however, is attached to Dr. Cronin for not having specified the strength of the water, as he must have been fully aware that it was not a preparation recognized by the Pharmacoporia, and one subject to great differences in point of strength. In the course of the evidence of Mr. Spratt (one of the chemists examined), he stated that he kept in his shop no less than five different strengths of the bitter almond water, from which it is apparent that great caution is required in defining clearly the nature of the preparation required. But it would be still better to avoid altogether the use of preparations of such variable strength.

52. *Attempt to procure Abortion by Administration of White Hellebore: is it a Poison?*—Sarah Whisker was charged at the Norwich Lent Assizes, 1846, with having administered white hellebore (*veratrum album*) to another female for the purpose of procuring abortion. One of the counts stated that the drug was a poison, but, strange to say, this fact was contradicted by the medical evidence. One of the medical witnesses even allowed that white hellebore produced noxious effects on the system, but denied that it was a poison. Fortunately, however, the count was fully sustained upon the evidence of another medical man, who gave it as his decided opinion that it belonged to the class of poisons. We cannot imagine how any other opinion could have been entertained by any well-informed practitioner, when it is well known that this plant owes its activity to *veratria*, one of the most poisonous vegetable alkaloids known. Moreover, Dr. Christison relates a case where death resulted from the administration of a small quantity of the powdered root.\*

53. *Homicidal Insanity*.—A case of infanticide, committed under the influence of insanity, was tried before Mr. Justice Williams on the Western Circuit, at the last Spring Assizes, and is reported in the "Times" newspaper, March 8, 1847. The following are the leading particulars of the case: Mary Ann Beveridge was charged with the wilful murder of Thomas Beveridge, her male child, of the age of 13 months. The prisoner is 39 years of age. She had been blind for seven years, and was the mother of several children. Her husband was a man of extremely profligate habits, and was living with a woman of the name of Bunter. This course of life entailed great misery on his family; their meals for a length of time were reduced to bread and water, and the mind of the prisoner became affected. The deceased infant was in arms: it was 13 months old. She still continued to suckle it, because, as she stated, if she weaned it, she was fearful it must die for want of proper nourishment. She was a kind mother, but was always fearful that she could not procure for her children even the simple food that was necessary for their existence. The father heeded this not, but continued his habits, and left his blind wife to get on in the best way she could. Shortly after the birth of the deceased she became evidently mad for a time, but had become better. She was frequently complaining of her head, and did so particularly on the afternoon of the 22d of January. Soon afterwards she told her eldest girl, 15 years old, to fetch her father from a public-house, where she expected he was spending his hours and his money. The girl went to the public-house, and

\* Med. Examiner, July 1846.

there saw her father drinking with the woman Bunter. She then returned, and told her mother that her father would be home directly. The mother told her to go again; she did so, and again returned with the same message. Her mother then had her bonnet on her head, and was standing on the stairs, but not seeing the baby in her arms as usual, the girl asked her mother where he was. The mother said he was asleep, and she then told the girl she wanted her to fetch a policeman, for that brazen Bunter and she must go to the police station. The girl accordingly led her to the police station. Having arrived there, the mother said, "I am come to give myself up as a murderer. I have murdered my child." This did not create much alarm in the girl's mind, and she told the constable that he must not take any notice of what her mother said, for she was out of her mind. The mother, however, persisted in her story. The officer asked her where the child was. She said she had hung it up-stairs behind the door in her house. The policeman hurried away to the prisoner's house, and, in an up-stairs room, he discovered the child on the floor, with a handkerchief tied round its neck. A surgeon was called in, and he stated that the death of the child had been occasioned by strangulation. The jury acquitted the prisoner on the ground of insanity.

54. *Execution for Murder committed during a State of Insanity.*—In the American Journal of Insanity is the account of a trial, during 1845, in the state of Kentucky, of Dr. Baker, for the murder of his brother-in-law. All the evidence throughout the trial incontestably proves the insanity of the culprit, who nevertheless was condemned and executed on the 3d of October, 1845.\*

55. *Rape committed on an Idiot: Possibility of consent decided by her general habits and conduct. Reg. v. Ryan.*—In the Central Criminal Court, September 26, 1846, the prisoner, Ryan, was indicted for rape; the prosecutrix, who was an idiot, when introduced into the witness-box, could not answer the questions put to her, was quite unconscious of their purport, and was not in a condition to understand right from wrong. The judge asked her father as to her general habits, whether they were those of decency and propriety. The answer was in the affirmative. The judge, in summing up, said, "the question was, did the connection take place with her consent? As it seems she was incapable of judging, it was important to consider whether a person in that condition could consent to the act; but if her habits were loose or indecent there might be a probability, however irresponsible she might be, of such a consent being given, and a jury might not think it safe to conclude that she was not a willing party. But here the probability is that the young woman would not have consented; and if she were in a state of unconsciousness at the time the connection took place, whether it was produced by any act of the prisoner, or by any act of her own, any one having connection with her would be guilty of rape. If you believe that she was in a state of unconsciousness, the law assumes that the connection took place without her consent, and the prisoner is guilty of the crime charged." The prisoner was convicted.†

56. *Decisions respecting Policies.*—A case was tried in the Exchequer Chambers, June 1846, to ascertain the effect of the clause usually inserted in life policies, which states that the policy becomes void should the insured commit suicide. In the present instance the insured had effected five policies for 999*l.* each in the Argus Company, and in a fit of insanity swallowed some sulphuric acid, and died. The company refused to pay, and the wife obtained a verdict against it, in a trial instituted before Mr. Justice Cresswell; a bill of exception to the summing up of the judge was then tendered. The Lord Chief Baron and Mr. Justice Wightman, in the second hearing, sided with the former decision, as they both considered that an insane man, not knowing right from wrong, could not commit suicide any more than he could murder; but as all the other judges thought otherwise, the former verdict was reversed, and a verdict for the company was recorded.‡

\* Dublin Med. Press, Sept. 9, 1846.

† Law Times, and Med. Gazette, Nov. 1846.

‡ Month. Journal of Med. Science, May 1846.

## VI.

# REPORT ON THE PRESENT STATE OF KNOWLEDGE RESPECTING THE SURGICAL, MEDICINAL, AND OBSTETRICAL APPLICATION OF THE VAPOUR OF ETHER.

BY THE EDITOR.

THE introduction of a new remedy, or a new means of obviating the many undesirable events contingent upon the practice of medicine and surgery, is always regarded in a different light by different members of the profession. There are some among us, on the one hand, who, contented to move along in the mental "jog-trot" to which they have been long accustomed, look with suspicion or dislike on any innovation upon the ancient opinions with which they have enfolded themselves. These are the men who ridiculed and opposed the introduction of the stethoscope, and who will continue to ridicule and oppose anything else which they had not "dreamt of in their philosophy," and which either threatens to interfere with the usual routine of their thoughts, or necessitates a greater amount of intellectual application than they are capable of devoting to it. There is, on the other hand, another equally mischievous, perhaps, but far more interesting class of practitioners, whose imagination is apt to lead them to expect something great of every chimera which a busy age is continually forcing upon the attention. These men take up mesmerism, homœopathy, and such-like vagaries; become positive as to the curability of incurable diseases; and alternately blow hot and cold upon every medicine with an impossible name, which is ushered into notice by the inventive genius or needy exchequer of the practical pharmacopolist. Between the priggish contempt of novelties exhibited by one class of medical practitioners, and the injudicious favouritism of the other, it is seldom that any new suggestion for the benefit of mankind meets with that dispassionate judgment which the public has a right to expect from those who constitute themselves the guardians of its health; and it is generally not until the lapse of a considerable time that its merits or demerits can be ascertained with anything like certainty.

The introduction of the inhalation of ether, for the purpose of annihilating pain in surgical operations, and of depriving even the dreaded process of parturition of its pangs, has not been exempted from the ordinary fate of novel propositions in medicine, although it must be allowed that the objectors to the value of this agent form the minority of those who have been led to reflect upon its applicability. Still there have not been wanting, in every locality, some over-cautious or over-timid persons, who are haunted with the idea of the danger which must attach to means so extraordinary, and who look upon an ether inhaler as almost a synonym for apoplexy or asphyxia. These individuals, however, as we have said, are few in number, and their opinions are, therefore, of little consequence as respects the estimation of the agent; the real danger to which it is exposed arises from the precipitate encomiums of its friends, and the reckless manner in which it appears to be made use of, without reference to, and by persons utterly incapable of judging of, the normal or diseased physical peculiarities of the patient.

In the following Report it will be our endeavour, as far as present experience of its effects will allow, to place the inhalation of ether as an anodyne and medicinal agent in a just light; laying before the reader an analytical digest of those communications upon the subject which appear to us to be most worthy of confidence.



§ I.—*Historical Notices.*

1. *Prior Use of Ether Inhalation.*—The old and oft-repeated adage of “there is nothing new under the sun,” is, as it appears, as applicable to the subject under discussion as to the many other discoveries in connection with which it has from time to time been quoted. We would not, however, have it understood that we look upon the incidental use of ether vapour, which has undoubtedly been made years since, in several instances, as in any degree derogating from the honour which is in common justice to be accorded to the American gentlemen who, at the close of the last year, brought the subject prominently before the medical world; indeed, were it not necessary, as a part of the scheme of a “Report,” to allude to these instances of the previous application of ethereal vapour, we should have passed them by as mere curiosities of medical experience, and unworthy of further notice.

It may be stated, then, briefly, that the fact of the medicinal use of ether vapour many years since is proved by the following references:—

1st. The inhalation of the vapour of ether as a therapeutic agent appears to have been first thought of and employed by Dr. Richard Pearson, in the treatment of phthisis pulmonalis, either alone or in combination with narcotics.

His communication upon the subject may be found in “Medical Facts and Observations,” vol. vii., and in the first volume of “Annals of Medicine,” 1796. He states that it may be used with safety both by children and adults, ether by breathing through an inverted funnel, or from a wetted pocket-handkerchief. In 1803 the same physician employed it in an epidemic of influenza, from which time disappointment in its effects appears to have induced him to abandon it.\*

2d. Dr. Beddoes, in his account of inhalation of various kinds of factitious airs in disease, also refers to the employment of ether, and relates cases by Dr. Pearson, as well as two in which it was used by a Dr. Thornton, one being an instance of painful affection of the breast. It is curious that this lady, after inhaling for five minutes, is described as having fallen back in a swoon, and having remained insensible for ten minutes. When she recovered, the pain in the breast was found to be much relieved.†

3d. Dr. Woolcombe, of Plymouth, is also represented as having used the remedy at the commencement of the present century.‡

4th. In 1815, Nysten, in his article on ether in the “Dict. des Sciences Méd.” vol. xiii., speaks of its inhalation in the treatment of colic, one of the diseases in which, as we shall hereafter see, it has recently been found to be efficacious.

5th. In 1818 an anonymous communication appeared in the “Quarterly Journal of Science,” which is supposed to have been from the pen of Professor Faraday. It is to the following effect:

“When the vapour of ether mixed with common air is inhaled, it produces effects very similar to those occasioned by nitrous oxide. A convenient mode of ascertaining the effect is obtained by introducing a tube into the upper part of a bottle containing ether, and breathing through it; a stimulating effect is at first perceived at the epiglottis, but soon becomes very much diminished, a sensation of fulness is then generally felt in the head, and a succession of effects similar to those produced by nitrous oxide. By lowering the tube into the bottle, more of the ether is inhaled at each inspiration, the effect takes place more rapidly, and the sensations are more perfect in their resemblance to those of the gas.

“In trying the effects of the ethereal vapour on persons who are peculiarly affected by nitrous oxide, the similarity of sensation produced was very unexpectedly found to have taken place. One person, who always feels a depression of spirits on inhaling the gas, had sensations of a similar kind produced by inhaling the vapour.

“It is necessary to use caution in making experiments of this kind. By the imprudent inspiration of ether, a gentleman was thrown into a very lethargic state, which continued, with occasional periods of intermission, for more than thirty

\* Brit. and For. Med. Rev., April 1847. Lancet, April 3. Paper by Dr. Gardner.

† Brit. and For. Med. Rev., Ibid.

‡ See Mr. Robinson's pamphlet.

hours, and a great depression of spirits, for many days the pulse was so much lowered that considerable fears were entertained for his life."

6th. Dr. Hargrave, of Dublin, also makes a statement to the effect that in a case witnessed by him, long before the question arose, he had seen spasm of a tetanic character in a young female immediately suspended, by inhaling the vapour of ether poured into the hand.\*

Such are the best authenticated instances of the earlier use of ethereal vapour; whether the case of the gentleman alluded to, or that of the maid-servant who was found dead in her bed from the impregnation of her room with ether,† were the cause or not, certain it is that its application appears to have been abandoned from this time, until the end of the past year, from which period we may date the practical employment of the agent to the alleviation of pain in surgical diseases, to the alleviation of the pains, both normal and abnormal, of the parturient process, and to the treatment of various painful and spasmodic diseases.

2. *History of the Re-discovery of the Properties of Ether Vapour.*—The first intimation of the actual application of ether vapour to the specific purpose of annihilating pain under surgical operations was given to the scientific world in this country by the epistolary communications of Dr. Bigelow, Dr. Ware, and others, to Dr. Boot and to the editors of several British medical journals; which communications were published in the "Lancet" of Dec. 6th, 1846, and in the "British and Foreign Medical Review," Jan. 1847. From these it appears that the two persons principally engaged in promulgating the discovery are Dr. Jackson, a distinguished chemist, and Dr. Morton, a dentist, of Boston. The first operation of consequence performed under its influence appears to have been that of amputation of the leg at the Massachusetts Hospital, Nov. 6, 1846, by Dr. Hayward.

The respective shares of Drs. Jackson and Morton, as may be seen from a private communication to Dr. Gardner (Lancet, April 3, 1847), may be determined from the following data:—

Dr. Morton had been for a considerable time engaged in the inquiry after some means of abolishing pain in his own branch of the art, and having been a chemical pupil of Dr. Jackson, communicated to that gentleman the subject of his investigations. Dr. Jackson, in reply to some inquiries on the part of Dr. Morton, observed that he had seen sulphuric ether, when inhaled, produce insensibility, and suggested that it might answer his purpose. On receiving this hint, Dr. Morton experimented upon himself, by inhaling through a sponge saturated with ether, and found, on reference to his watch, that he had rendered himself insensible, and had remained so for eight minutes. He then immediately operated with success on a dental patient. This was in September, 1846. It is thus rendered evident that the idea was Dr. Jackson's; the merit of applying that idea belongs to Dr. Morton.

3. *Claims to Originality disputed.*—It would have been a circumstance almost unparalleled in the history of medical inventions, if the announcement of the extraordinary results which followed the inhalation of ether had not roused the vigilance of some of that tribe of *ex post facto* discoverers, who are ever ready to pounce upon the proceeds of another man's brains. We accordingly find that no sooner was the subject mentioned in the journals of the day than claimants to prior discovery started up. Dr. Collyer, of Jersey, for instance, put forward a claim, in virtue of a book of which nobody that we can find has ever heard, and of which, strangely enough, he omits himself to mention the title. In this he had suggested that inhalation of narcotic and stimulating vapours might induce insensibility to pain.‡ This preposterous claim requires no further mention. Another gentleman allows his friendly feelings to carry him away so far as to vindicate for the deceased Dr. Hickman the priority of discovery, because that gentleman had experimented with carbonic acid gas. What this has to do with the inhalation of ether we do not clearly make out. We have, also, as might be expected, a Frenchman asserting, "pour la gloire de la belle France," that he is the indubitable originator of the blessing, if such it prove to be—and why? because, forsooth, he had long since known that cocks and hens might be rendered insensible by

\* Dublin Med. Press, Feb. 3, 1847.

† Christison on Poisons.

‡ Med. Gaz. and other Journals, Jan. 1847.

touching the pharynx with sulphuric ether. A fourth claimant of the honour of the discovery is Mr. Horace Wells, also an American dentist; we cannot, however, make out that he has any right to consider himself as the originator of *ether* inhalation, inasmuch as his operations were performed under the influence of an *exhilarating* gas, the nitrous oxide. Moreover, in a letter to Dr. Jackson (*Lancet*, May 22d), he incidentally concedes that gentleman's claims to originality, admitting, in as many words, that it would "make his fortune."

## § II.—*Preparation, Application, and Physiological Action of Ether, &c.*

4. *Nature and Mode of Preparing the Agent.*—The agent by which insensibility to pain has been achieved is rectified sulphuric ether; other ethers have also been used, as the chloric and acetic; the former is said to be equally potent, and less disagreeable. We have personally tried perfectly pure nitrous ether, but we found it to produce a painful oppression of the chest, with incessant coughing which remained for an hour or two, but subsided after a few inhalations of the pure sulphuric ether. In order to produce satisfactory results it is necessary that the ether should be *perfectly pure*; the sulphuric ether of commerce, which contains sulphuric acid, alcohol, or the acetic or formic acids, is quite unsuited for the purpose. The mode of preparing pure ether is thus laid down by Dr. Jackson. "The basis of all the ethers is an hypothetical radical called ethule, which is represented by the formula  $C_4H_5$ , and symbol Ae. Pure sulphuric ether is regarded as an oxide of ethule, and is represented by the formula  $C_4H_5O$ ; its symbol is Ae O. It is prepared by decomposing highly rectified alcohol by means of sulphuric acid. Five parts of alcohol of 90 per cent. are mixed with nine parts of oil of vitriol in a vessel of copper or iron, placed in cold water. The action of sulphuric acid on alcohol is catalytic; bisulphate of the oxide of ethule is formed, which, by elevation of the temperature and brisk ebullition, is decomposed, and the oxide of ethule passes over in vapours, the sulphuric acid remaining with a portion of undecomposed alcohol, the water which passes over the vapour no longer uniting with the ether. The distilled liquid is next to be treated with an alcoholic solution of potash to neutralize the acids, and to render it slightly alkaline. It should then be redistilled in a water-bath, and the operation should be arrested as soon as the ether has attained a specific gravity of 0.72 at 80° F. The specific gravity may be still further reduced by allowing it to stand for some days, over dry chloride of calcium, and then redistilling it in contact with that substance. Ether thus prepared should not change the colour of litmus paper."<sup>\*</sup>

5. *Forms of Apparatus for Inhaling.*—The administration of ether vapour has been accomplished in a variety of modes, from the simple use of a sponge saturated with the fluid and held to the nose and mouth, to that of complicated and beautiful machinery. In fact, the forms of apparatus employed are almost as numerous as the operators, each having some particular fancy with respect to points in which he considers his own invention superior to that of others. We shall only mention those in most common use.

1st. *Robinson's inhaler*, as manufactured by Mr. Hooper, of Pall Mall, consists of a glass receiver, resembling the bottom of a Nouth's apparatus, into which a second globular glass is inserted with a ground stopper; a tube projects from the latter into the former. The upper glass globe is stopped with a perforated stopper, the smaller stopper of which is removed during inhalation. Into the globe pieces of sponge are inserted, which are saturated with ether. The modes of using this apparatus are familiar to all.

2d. *Startin's pneumatic inhaler.*—This inhaler comprises four parts; 1, the inspirator or mouth-piece, with a spring to compress the nostrils; 2, the receiver and hot-water stand; 3, the injector; 4, the fumigator; the latter contrivance has no connexion with the inhalation of ether. The receiver consists of a three-pint glass vessel, which is intended for the reception of the vapour to be inspired mixed with sufficient air for a single inspiration. The receiver contains also a small quantity of water, which should be at such a temperature as can be borne by the hand, and into which a glass tube leads through the glass stopper, and dips for a

\* *Lancet*, April 24, 1847.



quarter of an inch; this tube communicating with the air by an inverted conical opening. A second tube, also, perforates the stopper, as a continuation of the inhaling tube. The receiver is placed in a hollow stand which contains water at 200°.

The part called the injector consists of an inverted cone of metal, furnished near its apex with a small stopcock and pipe, and perforating the stopper between the above-mentioned tubes so as to communicate with the receiver. The top of the injector is composed of thin elastic metal, which yields to the atmospheric pressure, so as to inject into the receiver at each vacuum created within it by inspiration a jet of the ether which is placed in the conical cavity above mentioned. This jet of ether is vaporized by the warm water.

*Dr. Snow's inhaler* is a neat and portable form of apparatus, and consists of a shallow metal box, resembling a tinder-box in shape, with a tube of flexible metal, half an inch in diameter, coiled round and soldered to it. In the interior a horizontal division runs in a spiral direction, so as to give a larger surface for the passage of air over the sponges saturated with ether. Dr. Snow has done great service to the cause of inhalation, by pointing out the different quantities of ether vapour contained in the atmosphere of the receiver at different temperatures, and his instrument being of metal, and consequently a good conductor, is peculiarly suitable in those cases in which it may be an object to be aware of the proportion of ether vapour inhaled. This is regulated by placing the instrument in water of different temperatures. Dr. Snow has also constructed the following table, showing the quantity of ether which 100 cubic inches will take up at various temperatures, and at a mean barometric pressure of thirty inches.

Temp. Fahr.						Cubic inches of Vapour.
30°	-	-	-	-	-	26
35	-	-	-	-	-	30
40	-	-	-	-	-	37
45	-	-	-	-	-	43
50	-	-	-	-	-	52
55	-	-	-	-	-	62
60	-	-	-	-	-	76
65	-	-	-	-	-	93
70	-	-	-	-	-	115
75	-	-	-	-	-	147
80	-	-	-	-	-	200
85	-	-	-	-	-	284
90	-	-	-	-	-	476*

A fourth form is that of the common meerschaum pipe, the bowl consisting of glass; this is manufactured by *Mr. Tracy*, and has been extensively used at Bartholomew's Hospital.

*Mouth-piece.*—Whatever be the figure of the vessel in which the evaporation of the ether is accomplished, the mouth-piece, with some trifling variation, is constructed on the same principle, that of a double valvular action, to allow of the expiration into the atmosphere of the air which has passed into the lungs through the ether receptacle. This is accomplished by two valves of opposite action, in shape either spherical or flat, according to the taste of the manufacturer. The end of the tube containing the valves is furnished in some cases with a projecting nipple, like the end of a pipe-stick, which is received into the mouth, as well as with a concave elliptical shield of India rubber, which is made to inclose the mouth and fit accurately to the cheek. In other cases, and, as it appears to us, with great advantage to the patient, that portion of the mouth-piece which is received into the mouth is dispensed with. The tube is supplied below the valves with a stopcock, by which the supply of ether can be regulated. Most of these instruments are also furnished with a nose-clip.

It would be difficult to decide upon the relative merits of these several forms of apparatus, all of which are capable of effecting insensibility if dexterously used. It has, however, appeared to us that the effect is produced with most certainty by

the apparatus originally made by Mr. Hooper; the only objection to which is its bulk, and consequent inconvenience as to portability. As regards the latter point, none is superior to that manufactured by Mr. Tracy. The main requisites of a perfect instrument, as far as personal observation enables us to judge, are a large evaporating surface, a diameter of respiring tube and of valvular apertures of not less than three-quarters of an inch, and a contrivance to allow of the respiration of atmospheric air alone without displacement of the apparatus; these requisites may, of course, be all combined under various modifications of external form.

6. *Mode of Exhibiting the Ether; Precautions.*—However trifling the amount of injury has been in proportion to the frequency with which ether inhalation has been practised, there cannot be a question that an agent capable of inducing such remarkable and potent effects ought not to be regarded as a “scientific toy,” or even to be employed at all by persons unacquainted with the principles of physiology and pathology. The precautions which we are disposed to consider requisite are as follows:

1st. Never to exhibit the ether vapour without having previously auscultated the heart and lungs.

2d. Never to employ it in persons who have signs of obstructive disease of the heart to any amount, or of dilatation of its cavities, or whose heart is feeble even though not disproportioned.

3d. Never to employ it in persons who have any considerable portion of a lung unfitted for respiration, as from hepatization, tubercular deposit, pleural effusion, &c.

4th. In persons with short necks, with tendency to cerebral congestion, its employment is not without risk; also, (perhaps) in those with disposition to insanity or other recurrent disease of cerebral origin.

5th. No operation of consequence should be performed under the influence of ether without a preliminary “trial” exhibition.

7. *Rules for Exhibition.*—Directions as to the method of exhibiting the ethereal vapour have been given by Mr. Robinson,\* who was one of the earliest experimenters in this country, by Mr. Braid, M. Burguieres,† and others; these are, however, all in effect nearly the same, and may be thus briefly stated.

1st. The ether employed should be the purest washed sulphuric ether.

2d. The patient should be allowed to respire atmospheric air alone for a few moments if the apparatus is so formed as to allow of it, if not the nose should not be closed until several respirations have been taken, and the patient continues to breathe without trepidation.

3d. The ether should not be turned on in a full jet at once, but the stopcock should be so regulated as gradually to accustom the bronchial tubes to the vapour.

At this time coughing is apt to ensue, especially if the ether be not perfectly pure; this symptom, however, soon subsides, or can be moderated by a regulation of the jet of the ether.

4th. Surgeons differ in opinion as to the exact point at which inhalation should be suspended; we believe that for surgical purposes, Mr. Robinson's test as afforded by the state of the eye will be a sufficiently good guide.

5th. In prolonged operations, it is necessary to alternate respiration of pure atmospheric air with that of ether vapour; this is accomplished by removing the clip from the nose, or still better, in those instruments which are so made, by shutting off the ether and turning on the air.

8. *Oxygen, &c. as Antidotes.*—Under the impression that the specific effects of ether vapour upon the system are due to its power of producing a state analogous to asphyxia, it has been suggested by Dr. Jackson, and subsequently by Mr. Robinson, that oxygen gas should be kept ready to be inhaled in case of the occurrence of formidable symptoms. Mr. Hooper, acting upon the suggestion, has supplied his inhaler with the means of furnishing oxygen at pleasure.

On the other hand, Dr. Gull concludes, from a series of experiments on the lower animals, that oxygen has no antidotal power, that in fact if an animal be etherized and then made to inspire oxygen, it does not recover more speedily than

\* *Lancet*, Feb. 13.

† *Med. Times*, May 15.

if it respired atmospheric air alone.\* Nearly the same opinion is expressed also by Dr. Snow.†

We believe that the best treatment for *hypertherization*, if we may be allowed to coin the word for the occasion, would be the administration of diffusible stimulus, friction over the region of the heart, dashing cold water on the chest so as to excite deep inspirations, and, in aggravated cases, blood-letting to a small amount.

9. *Administration of the Vapour of Ether by the Rectum.*—M. Pirogoff has stated that all the narcotic effects of ether may be as readily produced by causing the vapour to pass into the rectum, as by inhalation, and he believes that this latter mode of exhibiting it will speedily be superseded. His proceeding is first to empty the rectum by a common enema, and then to introduce an elastic pipe, which is connected with some receptacle, as a syringe, which is half filled with ether. This reservoir is then covered with a towel wet with warm water and evaporation speedily commences, and the vapour mixed with air passes into the bowels. The professor states that the breath is impregnated with the odour of the ether in ten minutes, and that all the symptoms of narcotism are induced in five minutes. This modification is undoubtedly worthy of trial, as by it all the objections heretofore brought against the ether inhalation on the score of asphyxia are completely done away with.‡

10. *General Effects.*—The effects of the inhalation of ether, as of the nitrous oxide, vary considerably in different individuals. In some, but we believe a comparatively insignificant number, great excitement is manifested at the commencement of the process; we have seen patients exhibit all the violence and even fury which is occasionally produced by the nitrous oxide; if, however, inhalation can be persisted in, this excitement speedily yields to a state of torpor and ultimate insensibility. The writer of an article on ether inhalation, in the “British and Foreign Med. Rev.” (April, 1847), pronounces his belief that the excitement is frequently attributable to the too gradual administration of the vapour, and advises that in all cases it should be given in as full a jet as the bronchial tubes will tolerate. In by far the majority, however, no such excitement is manifested, the patient passing gradually into a state of profound insensibility.

By some experimenters, and more particularly those of the French school, the process of etherization is divided into three periods.

In the *first* period, the inhalation is accompanied by a sensation of stinging or heat in the bronchia, which excites coughing. This, however, speedily subsides, and the patient passes into the *second period*, in which any movements which the patient may have been making are replaced by perfect quiet. The respirations are short, and the expirations prolonged and forcible. The arms fall relaxed, and the eyelids begin to tremble in a manner very characteristic, and if the eye be uncovered, the pupil will be seen to oscillate, with a tendency to turn upwards and inwards. At this time perception of external objects fails, the head drops on one side, and the patient passes into the *third period*, or period of complete insensibility. The pupil is now completely turned up under the eyelid, and the patient takes no notice of pinching or other means of rousing his attention. This has been termed the *surgical* period, and is the moment usually chosen to commence an operation.

The first effect of ether upon the circulation is to accelerate it; the pulse subsequently falls, and in the third period loses power as well as frequency.

The psychical effects of ether are remarkable, and, as in the case with the nitrous oxide, appear to be modified according to the age, habits, or propensities of the individual. Thus the little child dreams of its playthings; the sportsman is following the hounds or catching the imaginary salmon; the game-keeper we have known to dream of a conflict with poachers; the labourer that he is getting drunk in a pothouse of which he is an habitué. In females, especially those of a warm temperament, emotions have been manifested which are ill adapted for general inspection; in some it has been evident by their movements that they were under the influence of the fully-developed sensations of the venereal orgasm. These

\* Med. Gaz., April 30, 1847.

† Lancet, May 29, 1847.

‡ Med. Gazette, May 28.



untoward displays are, however, we believe, very unfrequent; but it is well that the operator should be aware that their occurrence is not impossible.

A difference of opinion exists as to the conditions of the sensorium during etherization. Some maintain that the sensation of pain is not abolished, but that the recollection of it only is lost, and certainly this opinion is in some degree countenanced by the cries and contortions manifested by patients who have, when their sensibility has been restored, asserted their perfect ignorance of the operation performed upon them. But, on the other hand, it must be remembered that neither ejaculations nor struggling is a proof of sensation, as we witness both in the epileptic, whom no one, we presume, will maintain to be conscious during the paroxysm. This question is, however, after all, one of mere curiosity; whether the patient be utterly unconscious of the knife or only forgets its pang, the effect is the same upon his mind; *he* believes, at least, that he has not suffered, and the subsequent condition of his system in the majority of cases would lead to the conclusion that he has not.

11. *Time required to produce Insensibility.*—This varies mainly, we believe, according to the degree of skill with which the vapour is exhibited. We have seen it produced in two minutes, and only imperfectly induced at the expiration of twenty; in the latter instances we have generally observed some imperfection, either in the instrument or in the application of the mouth-piece. Insensibility is more rapidly produced in children and women than in men, and the period appears to be abridged by repetition of the inhalation.

12. *Period during which Insensibility remains.*—This also is subject to variation; the average duration may be stated to be from two to six minutes. Sometimes, and especially in those ill-managed cases in which the patient is more suffocated than etherized, he does not perfectly recover his consciousness for half an hour or more. The restoration is sometimes gradual, at others sudden, the patient instantly starting up as from a dream. He is for a moment or two somewhat incoherent and staggers about as if half drunk. No ill effects are left behind in the majority of cases; but in some, more or less headache remains for the rest of the day.

13. *Physiological Effects.*—No point in connection with the inhalation of ether has given rise to more discussion than that of its physiological action, some regarding it as identical with asphyxia, others with intoxication, others again as different from either. We shall not attempt to reconcile these conflicting opinions, for the reason that we believe that our present acquaintance with the subject is not sufficiently advanced to enable us to do so; we shall content ourselves with the analysis of the principal communications which relate to the subject, leaving our readers to draw their own conclusions.

M. Longet has executed a very elaborate series of experiments upon dogs and rabbits, the results of which are given in a lengthened paper published in the "*Archives G n rales*," Mars, 1847. These may be thus briefly recapitulated:

1st. There is complete momentary suspension of sensibility as well in all the parts of the cerebro-spinal axis which usually manifest sensation as in the nervous trunks themselves.

2d. The action of ether is more stupifying than that of alcohol, which latter merely deadens without abolishing the sensibility of the nervous centres.

3d. Ether abolishes momentarily but completely the reflex action of the spinal marrow and medulla oblongata.

4th. In animals this effect of ether on the spinal marrow may be in a measure controlled or prevented by strychnine.

5th. The cerebral functions are constantly suspended before those of the spinal marrow, and are re-established before them.

6th. Ether, in the living animal, enables us to isolate the seat of sensibility from that of the intelligence and of the will.

7th. The action of ether on the nervous centres may be so graduated as to produce two stages, which I demonstrate respectively—1, *the period of etherization of the cerebral lobes*; 2, *period of etherization of the annular protuberance*.

8th. The *true surgical period* corresponds to the etherization of the cerebral protuberance.

9th. The death of animals from ether seems to be due to asphyxia.

10th. As soon as complete insensibility declares itself the arterial blood becomes of a dark colour.

11th. From experiments performed in conjunction with M. Blandin, it would appear, that the continuation of inhalation for eight minutes after complete insensibility has been induced will cause death.

M. Flourens has likewise experimentalized upon the effect of ether upon the nervous centres: and as respects the order of succession in the phenomena of insensibility agrees closely with M. Longet. By a more extended study of the effect of the agent upon the spinal marrow he decides that sensation is first abolished, and then motion; but that in some instances both functions are lost simultaneously.\*

In an essay on the physiological action of ether, read before the Glasgow Medical Society, Dr. Buchanan expresses his belief that the vapour is absorbed by the lungs, and becoming mixed with the blood, operates directly upon the heart and brain. He explains the difference of action of the vapour inhaled and ether taken fluid into the stomach, upon the known immiscibility of ether with water, and the fact that when taken into the stomach it becomes after absorption so diluted by the various currents of blood which it meets with in its upward course to the heart, as to be rendered almost inert. When inhaled, on the contrary, it goes direct to the heart, mixed with the blood of the pulmonary veins only.†

A paper on the physiological action of ether, by Dr. Black, of Manchester, appears in the "Provincial Medical Journal,"‡ in which its *modus operandi* is explained upon the theory that the vapour is made to permeate the air-cells in virtue of the increased tension produced by the temperature of the body. When it has gained access into the circulation, he conceives that this tension still continues, and "when the distending agent reaches the brain in the current of the circulation, the elastic force meets with a counter-pressure in the resisting case of the calvarium: its tension, therefore, becomes increased, and the consequence is that the cerebral mass suffers compression even to paralysis of some of its functions."

11. *Effects of Ether upon the Blood.*—Some direct experiments to elucidate the effect of ether inhalation upon the blood have been recorded by Mr. Pring;§ but they merely tend to confirm what many, the writer among the number, have observed during operations, viz., that the arterial blood loses its florid colour. This fact, however, it must be stated, is denied by M. Lassaigne, who has given an analysis of blood before and after inhalation. He decides:

1st. That specimens of blood taken before and after inhalation [it should have been taken during the process] does not differ sensibly in colour or as to coagulation.

2d. The serum and clot offered the following difference:

Before inhaling	{ Clot	65.46
	{ Serum	34.54
		100.00
After ditto	{ Clot	59.69
	{ Serum	40.31
		100.00

3d. The clot appears less consistent before than after inhaling.

4th. The globules, fibrin and albumen are unaltered.||

Our personal experience, as regards the colour of the blood, is in accordance with that of Mr. Pring; the same fact is also distinctly confirmed in the experiments of M. Amussat.

15. *Objections to the Employment of Ether.*—As we have said in a former page, although the great majority of those who have witnessed its effects are strongly prepossessed in favour of etherization, there are some few who entirely object to its use, or would place its utility within very narrow limits. The objections urged

\* Encyclog. des Sciences Méd.

† Med. Gazette, April 1847.

‡ April 7, 1847.

§ Lancet, May 1, 1847.

|| Prov. Med. and Surg. Journal, May 5, 1847.

against it are various; some would endeavour to make us believe that the feeling of pain in an operation is an advantage to the patient, and that his convalescence is promoted by it. We know not upon what grounds such an opinion can be sustained; but we do know that much can be adduced on the opposite side of the question, to prove not only that pain is one of the greatest evils which the operator has to contend with, but that mere pain may, by contributing to what we are in the habit of calling "shock," be the immediate and sole cause of death. As a striking instance of this fact we may mention a case which recently occurred within our own knowledge, that of the application of a ligature for the cure of an erectile tumour of the entire breast. The patient, a healthy female, bore the initiatory steps of the operation without a murmur, without failure of pulse, and without change of countenance. The instant the ligature was tightened, which it was with the full force of two surgeons, she gave a yell of agony, the pulse became imperceptible, the countenance became ghastly pale, and in eighteen hours she was a corpse. There are, nevertheless, it must be admitted, some operations in which pain may be necessary as a guide to the surgeon, and lithotomy is one which comes under this category; the patient's consciousness here warns the surgeon when he has taken hold of the coats of the bladder, which otherwise he might seriously injure without being aware that he had included it in the grasp of his instrument. In all operations also in which a voluntary effort on the part of the patient is required it is inadmissible, as also in operations about the fauces.

An objection to its employment in midwifery has been propounded, based upon the denunciation of the Almighty to our first mother; and the consequent impiety of the attempt to deprive the act of parturition of its terrors. Without stopping to inquire of these objectors what exact amount of suffering they conceive to be the portion intended by the Creator, and without wishing it to be understood that we are favourable to the application of ether in the case in question, we would simply remind them that there is no authority in Scripture to indicate that *physical pain* is the punishment awarded as the heritage of woman. The proper rendering of the portion of Scripture whence the objection is derived (Genesis iii. 16) is, "I will exceedingly multiply the *wearisomeness* of thy pregnancy: in *wearisomeness* shalt thou bring forth children," &c. The word עָמַל signifies toil and the weariness attendant upon parturition rather than *positive pain*, which the parturient woman in the East does not suffer to any great extent.

The last and most important objection which we have to notice is that which springs from the occurrence of fatal operations, in which death has been supposed to have been directly produced by the poisonous effects of the ether vapour. These cases we shall briefly recapitulate, together with the various criticisms which have appeared respecting them, and we think it will from them be made tolerably evident that the accusation of fatality as regards the inhalation of ether is, to say the least of it, premature.

The following account of the cases in question, four in number, we take from an article on ether, in the "British and Foreign Med. Rev." (April, p. 558), before alluded to:

"1st. Case of lithotomy, by Mr. Nunn, of Colchester. This patient recovered from the effects of the ether after a short time, and continued in a quiet passive state, but without decided reaction, for twenty-four hours; at this period he had a chill. Not long after this chill there supervened a state of collapse, from which the patient never rallied. Nothing particular was found after death, except the 'fluid state of the blood,' and 'the flaccid heart'.

"2d. In the Grantham case (removal of a large tumour from the back of the thigh) insensibility was not produced by the ether, as the patient not only moved at every incision, but struggled, and declared afterwards that she 'felt pain when they cut.' The operation was a severe and long one, lasting, according to the testimony of a witness, 'an hour all but five minutes,' and according to the operator [the party of all others least able to take correct note of time.—Ed.] 'about twenty-five minutes,' the wound being 'about six inches long.' The principal witness stated that the patient 'had a little brandy and water before the operation was quite over, which she swallowed readily, and a little more when she was put to bed;' that 'when put to bed she appeared conscious;' that 'shortly after she took a little



gruel, and said she felt better, but spoke in a low and faint tone of voice; that 'she seemed quite conscious during the whole time, from the operation till her decease.' She never rallied, however, after the operation, but lived about twenty-eight hours after it. In this case also the blood was found fluid, and there was some congestion of the brain."

The above two cases have been published at length in the various weekly medical journals. The two following are not elsewhere made public; but the writer in the "British and Foreign Medical Review" vouches for their accuracy.

"3d. In 'a case of amputation in private practice, the patient, a gentleman upwards of seventy, was placed under the influence of ether by Mr. Robinson, and took about the average quantity. He does not, however, seem to have been completely affected by the ether, as he gave signs of pain, and said afterwards that he had felt it. The immediate effects passed off rapidly, though the patient did not rally satisfactorily; he, however, lived nearly four days after, presenting various nervous symptoms, among others slight recurrent delirium; the stump did not put on the healthy reparative process.

"4th. In a case of lithotomy in a boy, all the primary effects of ether passed off as usual, the patient living many days and dying from the effects of local inflammation. In this case no account is made of fluidity of the blood."

Upon these cases the writer of the article above mentioned observes—"Now, we put it to the candid consideration of all experienced surgeons, whether there is anything in any one of these cases in any one respect different from what they have repeatedly seen after severe operations performed before the employment of ether? In three of the cases we have the ordinary phenomena of 'shock' or sinking. In the Grantham case, an unusually long and severe operation (and in which the system was not fully brought under the influence of ether), we have scarcely any attempt at rally, and gradual sinking. In the Colchester case, although the patient never rallied well, we have no decided sinking until twenty-four hours after, when a severe nervous rigor supervened, followed by prostration, ending in death. In the amputation case, we have nothing like immediate sinking, but that anomalous nervous state described by Mr. Travers as 'prostration with excitement,' eventually ending in death after five days. In the lithotomy case in the boy, we have nothing but what is witnessed every year in every hospital; feeble reaction in a bad subject, followed by unhealthy inflammation and death."

To show the fallacy of attributing the effects observed in the above cases to the ether, the writer quotes the remarks and cases of Mr. Travers on *Constitutional Irritation*, in which the same train of symptoms are described; and then contrasts the mortality of the same operations without ether, exhibiting thereby that the mortality is such that we need not look further than to the "probability of death" under such operations to account for the fatal event. For instance, Malgaigne has shown that in 852 amputations of the extremities performed in the Parisian hospitals, from 1836 to 1842, 4 in every 10 proved fatal. Of 201 amputations of the thigh 6 in 10 died; of 192 of the leg, 5½ in 10 died; in 91 of the arm, 4½ in 10 died. Again, in Glasgow, according to Dr. Laurie, of 128 amputations of the thigh, 3½ in 10; in 62 amputations of the leg, 5 in every 10; and in 53 of the arm, 4½ in 10 died. And so of other operations, such as ligature of the larger arteries, in which 3½ in 10 have died. The merits of the question at issue, as deduced from a comparison of these different orders of facts, are laid down in the following words:

"On the one hand, we have three cases of the many hundred of etherized patients subjected to capital operations in which the patients, after the departure of all the peculiar effects or primary symptoms produced by ether, such as sopor, insensibility, &c., succumbed with a set of peculiar secondary symptoms, well known to surgeons, well known to terminate frequently in death, and in the cases in question presenting *not one peculiarity to distinguish* them from the ordinary cases of 'sinking from shock.' On the other side, we have many thousand [more than 10,000, according to Velpeau] of instances in which the same process of etherization was had recourse to, for slight operations or mere experiment, and in which the primary phenomena were as effectually induced as in the others, and yet *not one example of the occurrence of the peculiar secondary symptoms referred to,*

much less any instances of death. 'Is not the conclusion irresistible,' says the writer, 'that in these fatal cases it was the operation, not the ether, which killed the patients?' We think it is. How any mind conversant with the principles of logic can regard in the light of a cause, an agent which merely precedes a particular event, when that agent alone has never produced such event, but has in all cases where it has preceded it been in conjunction with another agent well known of itself to be capable of inducing that event, we are at a loss to conceive. Such, nevertheless, are the relative positions of ether and 'shock' in the fatal operations in question.\*

The criticism which we have just quoted from the pages of "The British and Foreign Medical Review" is in itself a sufficient answer to the objection to ether inhalation founded upon its alleged fatal effects; but to those of our readers who wish for further arguments of the same nature we recommend the perusal of a paper by Dr. Gardner, before referred to,\* also to one by Mr. Moore, referring to the Colchester case,† and to another by Dr. Farebrother.‡ This gentleman notices a most important omission in the post-mortem examination of the above case, which is applicable also to the others, namely, the state of the kidneys. In the Grantham case, moreover, the heart is distinctly mentioned as being "flabby," a condition very unfavourable to rallying after nervous shock.

Much stress has been laid upon the fluidity of the blood and the flaccidity and emptiness of the heart observed in the above fatal cases, and this state of blood has been referred to the effects of the ether vapour, and looked upon as proof of its having been the main cause of death. To this we have only to urge, that in animals which have been purposely destroyed by ether in the experiments of Amussat, no such fluidity has been observed; and, on the other hand, as may be seen in the opinion given to the Editor of "The British and Foreign Medical Review" by the most eminent pathological anatomist in London, that fluidity of the blood often occurs in connection with various morbid states, and therefore is not characteristic of the effects of ether.§ In respect to the state of the heart it may be stated that, in Amussat's experiments, that organ, so far from being flaccid and empty, was in every instance distended with blood.

It will, no doubt, be perceived, from the tenor of the above remarks, that we are, upon the whole, favourable to the inhalation of ether in surgical operations, and are somewhat more than sceptical as to the part played by that agent in the fatal cases which have been alluded to. We, however, beg to state most distinctly, that although up to the present time we have seen no reason from recorded experience to form other than a favourable opinion of its merits, we do not deny that ether inhalation is capable, under certain circumstances, of producing injurious if not fatal effects; our deliberate opinion is, as before stated, that it is not to be made a plaything of, and further, that it should never be exhibited but under the supervision of a medical man. In his hands, with common precautions, we believe that it may be exhibited with perfect safety.

Having thus endeavoured to lay before our readers the most interesting information connected with the discovery, physiological effects, administration, &c., of the ethereal vapour, we now approach the most interesting portion of our labours, viz. the record of the actual application of the agent in the three departments of medicine, surgery, and midwifery. Of these we shall first give an account of its employment in surgery, as the department in which it has been first and most extensively used.

### § III.—*Application of Ethereal Inhalation in Surgery.*

16. It is not our intention here to take any notice of the numerous instances of the successful applications of ether vapour in the art of dentistry, but to allude only to the more severe operations in which it has been employed. We may remark, however, *en passant*, that the general exhibition of so potent an agent by a class of men the majority of whom have no pretensions to physiological or pathological

\* Lancet, April 3.

† Med. Times, April 15.

‡ Med. Gazette, March 19.

§ Brit. and For. Med. Review, April, 1847, p. 555.



knowledge, without repeated accidents, is one of the strongest proofs of its comparative innocuity.

It is impossible to give anything like a correct statement of the number of cases in which ether has been employed in surgery, for as soon as the first blush of novelty had passed away, practitioners ceased to record their operations. We have, however, notes of upwards of one hundred cases in which inhalation has been followed by the most perfect success as regards the abolition of pain, and the majority of which have been represented as progressing favourably at the time of their report. Of the ultimate result of many of these cases no mention has been subsequently made, and we are, therefore, bound to conclude either that they terminated successfully, or, at all events that death, when it did occur, was at a period so distant from the time of operation as to preclude the idea of its connection with the administration of ether. Among these operations are several of the most formidable character, such as lithotomy, amputation of the thigh, leg, and arm, hernia, reduction of old dislocations, urethroplasty, &c., besides the minor but equally painful operations for removal of tumours, removal of venereal warts, phymosis, evulsion of nails, necrosis, castration, &c.; operations have also been successfully performed for cataract, entropium, squinting, and other affections of the eye.

M. Burguieres gives a table of 211 operations in the French hospitals, in which ether has been administered, and appends to it some remarks on the comparative mortality of the different classes of operations with and without ether, which are much in favour of its exhibition. For instance, in the case of amputations, he shows that the general mortality of cases operated upon in the ordinary way has been, between the periods of January 1836 and January 1841, 332 in 858, or 2 in 5 cases nearly. Of amputations performed with the aid of ether he records 45, of which 12 proved fatal, being an average of 1 in 4. Again, descending to particulars, M. Burguieres analyzes a series of amputations of the same kind, including the thigh, leg, and arm; in those performed with the ether the deaths have been 2 in 5; without it, in the period above alluded to, the mortality was 3 in 5.\*

We are not able to offer any definite account of the effect of ether inhalations upon the consecutive phenomena of operations, but it may be stated that in the few instances in which such effects have been recorded they are of a satisfactory character. Many surgeons have noticed that the depression of the system immediately succeeding capital operations has been much less than where the patient has not had the pain annihilated, that, in fact, the "shock" has been less; others have seen reason to believe that the reaction, the traumatic fever, is less than in ordinary cases. M. Jobert has, moreover, stated that the local inflammation has proved less, and that union by first intention has thus been prevented. This cannot be looked upon as in its favour.

On the other hand, it is but fair to state that it has been thought by some that abolition of contractility in the muscles is adverse to the formation of a good stump, and others have feared that consecutive hemorrhage is rendered more probable by the increased fluidity of the blood. We have not, however, met with any record of a case which justifies this apprehension.

#### § IV.—*Application of Inhalation of Ether in Practical Medicine.*

The vapour of ether as yet has been used therapeutically in but a small number of diseases, and in comparatively few cases only of these; we shall therefore be able, without much sacrifice of space, to give a tolerably comprehensive account of its effects in this department of the profession.

17. *Tetanus*.—From the consideration of its prominent property of abolishing pain, the attention of medical men was naturally soon turned towards its exhibition in those diseases in which pain is a marked feature; and among these tetanus was suggested as a disease in which its powers were especially worthy of trial. An opportunity of making the experiment having offered itself in the writer's own practice within a very short time of the introduction of ether inhalation into this country, it was readily adopted as an experiment, but without any anticipation of

\* *Med. Times*, May 22, 1847.



benefit, as he was at that time of opinion that the effects of ether were not able to reach the spinal marrow. The result proved that as far as its effects upon the disease is concerned that opinion was correct, for, instead of alleviating the spasms, the act of inhaling most distinctly induced and aggravated the paroxysms.

The case, which is reported elsewhere,\* is as follows:—A man aged about 60, but of remarkably fine and athletic proportions, ran a nail through his boot into the sole of his foot, near the ball of the great toe, while walking across some old timber. The accident gave him no uneasiness until the expiration of a week, when he complained of stiffness in the neck, and placed himself under the care of Mr. Coe, a surgeon, of Bury St. Edmunds. The next day the tetanic symptoms were general, and my co-operation in the treatment of the case was requested. On visiting the patient, about eleven in the morning, I found the jaw completely locked, the spasms frightfully violent, and considerable opisthotonos; in fact, every symptom was present of tetanus of the most acute character. Our treatment was commenced with the *Cannabis Indica*, full doses of which were with difficulty got down; but this medicine was for a period omitted in favour of the ether inhalation, which we determined to essay. A common bladder and pipe being furnished, and two ounces of the purest ether we could obtain being put into it, the patient was got into a bath at 180°, and the inhalation commenced. The warm water had partially relaxed the board-like rigidity of the body, and the poor fellow expressed some relief, when the attempt to insert the pipe again excited a strong spasm. Being, however, anxious to persevere, he contrived to push it into his mouth; but the first breath he drew aggravated the spasms in a tenfold degree, the body became perfectly opisthotonic, foam issued from the mouth, and the man altogether presented so frightful a spectacle that we might fairly have been excused had we desisted from that moment. We, however, after allowing the effects to subside, made one more attempt, when the recurrence of the same symptoms convinced us of the worse than uselessness of the proceeding.

It is, however, in reference to this case, important to state that, as it happened before any more effectual apparatus had been devised, the ether was exhibited by means of a common bladder and pipe. Whether, with one of the inhalers now in use, the result would have been different, it is, of course, impossible to state.

The above is not the only case of tetanus recorded, in which the symptoms have been aggravated by ether inhalation; one has recently been mentioned by M. Roux, in which death was, in his opinion, evidently hastened by the remedy.

On the other hand, we have some cases of tetanus to relate, in which inhalation either relieved only, or, to all appearance, was the means of cure. Thus Dr. Brady relates the following case:

“A man, æt. 26, after a fall, by which he hurt his back, complained next day of a feeling of stiffness of his neck and throat, which gradually increased. After a restless night he awoke suddenly, complaining that his jaws were closing. This increased with rapidity, and on the following day he came under Dr. Brady's care, in a state of complete tetanus. The inhalation of ether was suggested and tried. When he had inhaled for about a minute and a half, his eyelids were observed to drop suddenly, and his face to assume an expression of repose; upon which the mouthpiece was withdrawn, and being asked how he felt, he said he was relieved. The mouthpiece was then reapplied, and he continued to inhale until he fell back in the bed with his muscles relaxed. He lay thus, apparently in a calm sleep, for about four minutes, during which he exhibited no feeling of pain when pinched. Upon waking the spasms returned, when it was deemed advisable to have recourse to more energetic treatment, and the inhalation was, without, as it appears to us, any sufficient reason, omitted. A few hours terminated the case.”†

Another case, in which ether relieved the paroxysms, is reported by Mr. Broughton. The patient was a man whose arm had been shattered by the falling of a stone, and for which amputation had been performed. The symptoms of tetanus came on some days after, and were at first treated with opium and belladonna, but without relief. Ether was then inhaled, and he was soon under its

\* *Prov. Med. and Surg. Journal*, April 21, 1847.

† *Dublin Med. Press*.

influence. All contraction and spasm ceased, and he slept for ten minutes. As soon as he became sensible the spasms returned, but not with such violence. He again inhaled with the same beneficial result. He took it a third time, and it again relieved him. A subsequent spasm instantly destroyed him.\*

In the two succeeding cases the inhalation of ether in tetanus was followed by recovery.

The first case is extracted from the "*Clinique de Marseilles*," and is stated to have been under the care of M. Pertusco, surgeon to the Hospital of St. Maurice, at Turin. The disease was, we presume, of the idiopathic form, as no mention is made of any wound. The tetanic symptoms appeared on the 4th of February, and on the 13th had attained their greatest intensity, when the ether inhalation was adopted and repeated several times; the spasms became gradually less severe, until they ceased altogether.†

We do not look upon the above instance to be one in which much confidence is to be placed, as the details are far from satisfactory. The second, which is reported in the "*Provincial Journal*," is better authenticated.

"Charles White, æt. 12, became the subject of a scalp wound, which gave rise to tetanic symptoms. The ether was exhibited by Mr. Hawkesworth, and its narcotic effects were speedily induced. In a few minutes the jaw fell, and the whole body assumed a relaxed and passive condition. He remained quiet for a short time, but in about an hour the spasm and rigidity returned, but not so violently as before. Recourse was had to the ether a second time with good effect; and during each successive application the patient became more relieved. His recovery was speedy, and no medicine, beyond an occasional aperient, was exhibited.‡

18. *Insanity*.—Ether inhalation has not yet been tried to any extent in insanity. M. Cazenave, of Pau, and M. Jobert being the only persons who, to our knowledge, have employed it. It was given by the former to a female patient, who had rested neither night nor day for five months, and was the means of inducing tranquillity, without being followed by any injurious consequences.§

M. Jobert also used it in a case of simple insanity, with the effect of inducing sleep, and restoring, temporarily, a state of rationality.||

19. *Neuralgia*.—Cases of the beneficial influence of this agent in neuralgic affections have been recorded by Mr. Morris, Mr. Semple, and one also by M. Honoré.

Mr. Morris's first case was one of neuralgia of the fifth pair, for which, in former attacks, all known remedies had been unsuccessfully tried. In using ether, Mr. Morris did not find it necessary to produce complete insensibility, but it had the effect of dissipating the pain almost instantaneously.

The next case was one of neuralgia of the testicle, in which the pain was removed with equal success, though, from some imperfection in the apparatus, the effects of the ether were not so rapidly induced.¶

Mr. Semple's patient suffered from severe neuralgia of the head and face, to an aggravated degree, and had derived no benefit from any medicine, internal or external, which she had taken. At the time of inhaling the pain was of a most excruciating character; but on her recovery from the ethereal narcotism it had lost its severity, and subsided into a dull but bearable feeling of pain. The acute pain did not return\*\*

20. *Spasmodic Asthma*.—Dr. Willis†† and Mr. Cantrell‡‡ have both mentioned their success with the vapour of ether, in the treatment of spasmodic asthma. The former writer further states that he had long been in the habit of using it previously to its recent introduction into practice.

21. *Whooping-cough*. Dr. Willis also speaks favourably of its powers in this disease.

22. *Laryngismus Stridulus*.—An instance has recently occurred in the writer's experience, in which benefit was derived in a very severe case of laryngeal

\* *Prov. Med. Journ.*, May 5, 1847.

† *Revue Medico-Chirurg.*, Avril 1847.

‡ *Prov. Med. Journal*, May 19, 1847.

§ Reported in *Med. Gazette*, May, p. 878.

|| *Brit. and For. Med. Rev.*, April 1847.

¶ *Medical Times*.

\*\* *Lancet*, March 27, 1847.

†† *Lancet*, March 20.

‡‡ *Prov. Med. and Surg. Journal*, May 19.



spasm, by the use of a sponge saturated with ether. This case is reported by Mr. Image, of Bury St. Edmunds, with whom the case was seen by the writer in consultation.\*

23. Inhalation has also been used successfully in *Colica Pictonum*, by M. Bouvier, and in *Dysmenorrhœa*.†

#### § V.—*Application of Ether Vapour to Obstetrical Practice.*

Many circumstances conspire to render the application of ethereal vapour to the purpose of annihilating the pangs of childbirth the most interesting feature in the history of the discovery; but at the same time, from the number of points to be taken into consideration, in a process so complex as that of parturition, it is, of all the applications of the agent, that concerning which it is the most difficult to arrive at satisfactory conclusions. We have not to determine merely whether the inhalation of ether is capable of suppressing the pain which accompanies parturition, but we have to take note also of other conditions which complicate the problem. The action of ether upon the fœtus, and upon the general economy of the mother; whether the insensibility which paralyzed the voluntary muscles would not likewise abolish the contractility of the uterus and abdominal muscles—were all so many novel questions which it was necessary to elucidate. It required, we think, no small courage to take the first step in solving a problem so important; a problem in which to err would not have been to commit a mere physiological blunder, but, in point of fact, to sacrifice the two lives, the preservation of which was confided to our care. It would be premature at the present time, to make any decided observations as to the general applicability of ether to midwifery; but if it should appear, on further examination, that it is a safe proceeding in that important department of medicine, to Professor Simpson, as the first to make the experiment, the profession and the public will be not less indebted than to the original discoverers of the process itself.

The communications respecting the application of ether vapour to midwifery, which, in point of number, rank next to those devoted to its use in surgery, consist, for the most part, in the narration of individual cases. We shall recapitulate these as nearly as possible in the rotation in which they appeared.

24. The first to be noticed is a pamphlet by Professor Simpson‡, containing the subjoined cases, which we slightly abridge.

The first is that of a female in her second confinement, whose pelvis was so contracted as to have rendered craniotomy necessary in her previous labour. Contrary to the advice of her medical attendant, she did not make him aware of her pregnancy until nearly her full time, so that it was too late to have recourse to the induction of premature labour. The labour-pains commenced on the 19th, and in the evening Dr. Simpson caused her to inhale the ether vapour. As she afterwards informed him, she almost immediately came under its influence; but as her insensibility was doubtful, it was continued for twenty minutes before turning was commenced. The operation was performed, and a full-sized still-born child was extracted.

On questioning the patient after her delivery, she declared that she was quite unconscious of pain during the whole period of turning and extracting the infant, and only became fully aware of her situation by hearing the noise caused by preparing a bath for the restoration of the child; she quickly regained her full consciousness, and talked with gratitude and wonderment of her delivery and her insensibility to the pains of it. On the fifth day after delivery she was dressed, and her convalescence was rapid and uninterrupted.

The next two are forceps cases. One was brought into the Royal Maternity Hospital, in strong labour, early on the morning of the 3d of February. It was her second confinement. At her first accouchement (seven years before) she had been delivered by instruments, in Ireland, and had been informed by the attendant practitioner that artificial delivery would be similarly required at her future labours. Dr. Simpson saw her between ten and eleven o'clock a. m. The

\* Prov. Journ., June 2.

† Brit. and For. Med. Review, April 1847.

‡ Notes on the Inhalation of Sulphuric Ether in the Practice of Midwifery.



os uteri was well dilated, the membranes ruptured, and the pains extremely strong and frequent; but the large head of the child seemed not to enter fully into the brim, and was little affected by the powerful uterine contractions under which the patient was suffering. By three o'clock her pulse had risen to above 125 beats a minute, and it appeared to the medical officers present that it would be improper to allow the ineffectual and exhausting efforts of the patient to be longer continued. She was then, at the request of Dr. Simpson, brought under the influence of ether. Dr. Moir, with great skill, applied the long forceps upon the head of the child. He subsequently was obliged to use strong traction during the pains that followed, and becoming temporarily fatigued with his efforts, Dr. Simpson supplied his place. After the head fully passed the brim, the forceps were laid aside, and one or two uterine contractions finished the delivery. The child was large and strong, and cried vigorously soon after it was expelled. During the whole of this severe operation the patient appeared quiet and passive. The cries of her child speedily roused her from her etherized state, and she subsequently assured Dr. Moir that she had felt comparatively little or no pain during the whole operation and delivery.

The other case was seen by Dr. Simpson, in consultation with Dr. Graham Weir. The patient was advanced in life, and it was her first confinement. The waters had escaped early, and the anterior lip of the uterus had subsequently become forced down in a very swelled and œdematous state before the head of the infant. After this obstruction was overcome, the child's head speedily descended upon the floor of the pelvis; but it was there impeded in its further progress by the narrow transverse diameter of the outlet. Under the compression of the converging tuberosities of the ischia, the bones of the foetal cranium soon began to overlap; but at last, no further progress being made, the patient becoming exhausted by a continuous labour of about twenty-four hours, and the soft parts being evidently well relaxed and prepared, Dr. Weir applied the short forceps, and extracted a living infant. For a considerable time before this operation was adopted, Dr. Simpson exhibited the vapour of ether to the patient; under it she speedily became quite narcotized. Its action was kept up, and the pains appeared to be so strong as almost to warrant the idea that nature would yet be sufficient; but ultimately instrumental delivery was had recourse to. The mother did not fully recover from her state of etherization for ten or fifteen minutes after delivery, and then stated that she was quite unaware of what had occurred.

The foregoing cases, Dr. Simpson observes, point out one important fact; viz., that the uterine contractions in all continued as regular in their occurrence and duration after the state of etherization had been induced as before it; as yet, he states, that he has seen no case in which the pains have been diminished either in frequency or energy. In one case the combination of ether and tincture of ergot appeared to increase the strength of the uterine contractions.

As might be expected, from our experience of its effects in surgery, the inhalation of ether acts differently on different women. In some a total insensibility is induced, others appear to writhe under the uterine contractions, but when restored to consciousness, have no recollection of suffering; others again remain conscious of what is passing around them, and watch the return of the pains, but seem indifferent to their effects. Dr. Simpson relates two cases illustrative of the above difference. In one the lady knew all that was said around her, but felt nothing amounting to pain, and only expressed her regret for the unnecessary suffering she had endured in former confinements. The other female became excited, and refused to continue the inhalation, but in a few minutes recommenced; she, however, was equally insensible to the birth of her child.

Dr. Simpson makes the following remarks at the close of his interesting paper: "A careful collection of cautious and accurate observations will no doubt be required, before the inhalation of sulphuric ether is adopted to any great extent in the practice of midwifery. It will be necessary to ascertain its precise effects, both upon the action of the uterus, and of the assistant abdominal muscles; its influence, if any, upon the child; whether it gives a tendency to hemorrhage or other complications; the contra-indications peculiar to its use; the most certain modes of exhibiting it; the length of time it may be employed, &c. In no case have I observed any harm whatever to either mother or infant follow upon its

employment. And, on the other hand, I have the strongest assurance and conviction that I have already seen no small amount of maternal suffering and agony saved by its application. The cases I have detailed sufficiently show its value and safety in cases of operative midwifery. And here, as in surgery, its utility is certainly not confined to the mere suspension and abrogation of conscious pain, great as, by itself, such a boon would doubtless be. But in modifying and obliterating the state of conscious pain, the nervous *shock* otherwise liable to be produced by such pain,—particularly whenever it is extreme, and intensely waited for and endured,—is saved to the constitution, and thus an escape gained from many evil consequences that are too apt to follow in its train. Granting that experience will yet be able to prove its safety and efficacy in modifying and annulling the pains of labour, will (I have repeatedly heard the question asked) the state of etherization ever come to be generally employed with the simple object of assuaging the pains of *natural* parturition? Or (as the problem has not unfrequently been put to me) would we be ‘justified’ in using it for such a purpose? In conclusion, let us consider this point for a moment.

“Custom and prejudice, and, perhaps, the idea of its inevitable necessity, make both the profession and our patients look upon the amount and intensity of pain encountered in common cases of natural labour as far less worthy of consideration than in reality it is. Viewed apart, and in an isolated light, the degree of actual pain usually endured during common labour is as great, if not greater, than that attendant upon most surgical operations. I allude particularly to the excessive pain and anguish which, in nine out of ten cases, accompany the passage of the child’s head through the outlet of the pelvis and external parts. Speaking of common or natural labour in its last stages, Dr. Merriman observes, the pulse gradually ‘increases in quickness and force; the skin grows hot; the face becomes intensely red; drops of sweat stand upon the forehead; and a perspiration, sometimes profuse, breaks out all over the body; frequently violent tremblings accompany the last pain, and at the moment that the head passes into the world, the extremity of suffering seems to be beyond endurance.’ Or, take the picture of the suffering of the mother in the last stage of natural labour, as portrayed by the most faithful of living observers, Professor Naegele, of Heidelberg: ‘The pains,’ he observes, ‘of this stage are still more severe, painful, and enduring; return after a short interval, and take a far greater effect upon the patient than those of the previous stage. Their severity increases so much the more from the additional suffering arising from the continually increasing distension of the external parts. They convulse the whole frame, and have hence been called the *dolores conquassantes*. The bearing down becomes more continued, and there is not unfrequently vomiting. The patient quivers and trembles all over. Her face is flushed, and with the rest of the body is bathed in perspiration. Her looks are staring and wild; the features alter so much that they can scarcely be recognized. Her impatience rises to its maximum with loud crying and wailing, and frequently expressions which, even with sensible, high-principled women, border close upon insanity. Everything denotes the violent manner in which both body and mind are affected.’

“I have stated that the question which I have been repeatedly asked is this—will we ever be ‘justified’ in using the vapour of ether to assuage the pains of natural labour? Now, if experience betimes goes fully to prove to us the safety with which ether may, under proper precautions and management, be employed in the course of parturition, then, looking to the facts of the case, and considering the actual amount of pain usually endured (as shown in the descriptions of Merriman, Naegele, and others), I believe that the question will require to be quite changed in its character. For, instead of determining in relation to it whether we shall be ‘justified’ in using this agent under the circumstances named, it will become, on the other hand, necessary to determine whether on any grounds, moral or medical, a professional man could deem himself ‘justified’ in withholding, and *not* using any such safe means (as we at present presuppose this to be), provided he had the power by it of assuaging the pangs and anguish of the last stage of natural labour, and thus counteracting what Velpeau describes as ‘those piercing cries, that agitation so lively, those excessive efforts, those inexpressible



agonies, and those pains apparently intolerable,' which accompany the termination of natural parturition in the human mother."

Having thus given the opinions of Professor Simpson upon this interesting question, we shall next mention the experience and remarks of M. Dubois upon the same point. At a meeting of the French Academy of Medicine, Feb. 25th, M. Dubois stated that his attention had been directed towards the use of ether vapour in midwifery, and that he had more particularly endeavoured to arrive at definite conclusions on the following points: 1st. Whether by the aid of ether certain obstacles to parturition can be overcome. 2d. Whether it extinguishes the pains of labour. 3d. Whether its use is innocuous to the mother and child. 4th. Whether it would not, in extinguishing pain, also abolish the uterine contraction. 5th. Whether the consequences were innocent.

In elucidation of these questions, he related two forceps cases, in which the child was extracted without the least consciousness on the part of the mother; and some other cases of natural labour, the results of which rendered it manifest that the whole process of parturition could be safely conducted under the use of ether vapour, and that neither the uterine nor abdominal contractions were in the least diminished by it. M. Dubois further states that in some of his cases, though the head passed precipitately, there was not the slightest laceration of the perineum, and that in none of his patients was there any complaint of the after effects of the ether.

M. Dubois concludes by expressing his opinion that he could not at present recommend the common application of ether in natural labour, a conclusion which MM. Velpeau and Malgaigne did not think justified by the favourable experience of its effects which he had detailed.\*

M. Bouvier reported a case to the Academy, in which he considered that the inhalation of ether suspended the contraction of the uterus, because the pains subsided from the period of its exhibition, and recurred some time after the restoration of sensibility; but, as M. Roux observed in reference to this case, there is no evidence to prove that the subsidence of the pains was not spontaneous, and would have occurred if ether had not been employed.†

At the same meeting of the Academy, M. Chaillay (Honoré) related the following case. A lady, æt. 43, since the date of her former confinement had suffered from such extreme sensitiveness of the vagina, that intercourse could not be effected without extreme pain. For the same reason, when M. Chaillay arrived, an examination could not be made without eliciting cries of agony. When insensibility had been induced by inhalation, an examination was made, and the cause of the delay being found to be impaction of the head, the forceps were applied, and the labour quickly terminated. The woman cried out as the head passed the osium vaginæ, but declared that she had not suffered in the least degree ‡

The next case is one reported by Mr. Latham, in which the ether was exhibited by Dr. Lloyd. "The woman had been in labour for three hours: the os uteri was fully dilated, when inhalation was commenced. In about four or five minutes the patient was insensible, but the uterine contraction continued with regularity, though, as was thought, with some abatement of force. The membranes were now ruptured; the child's head gradually descended into the pelvis. Consciousness having returned, the patient said that she had felt no pain, but had been in a comfortable sleep, and dreamt that her child was born. She now began to feel the pains recur with their usual severity, and earnestly entreated us to give her the ether again; she even seized the instrument from Dr. Lloyd's hands and applied it to her mouth herself. After three minutes' inhalation unconsciousness was again established, and though the inhaler was occasionally removed, she was kept under the Lethæan influence for about ten minutes; after which time the apparatus was not again applied. The child gradually descended, the head pressing upon the perineum, which became perfectly relaxed, and the head and shoulders were expelled by one strong, continuous uterine effort, in eight minutes from the withdrawal of the inhalation. During the pains I applied my hand frequently to the abdomen, and found that the muscles were much more lax during than previously

\* Bull. des Acad.; Nouvelle Encyclogr., Mars 1847; Archives Générales, &c.

† Archives Générales, April 1847.

‡ Archives Générales, April 1847.



to the administration of ether. A few minutes after the expulsion of the fœtus a considerable gush of blood came from the uterus, which was now felt to be large and relaxed, but soon contracted again under the firm and steady pressure of the hands; the placenta quickly followed, and a broad bandage was tightly applied. (It must, however, be stated that this patient had suffered considerable hemorrhage after the expulsion of the fœtus in her previous labour.) On questioning her subsequently, she stated that she had felt no pain with the exception of the last, and that she would strongly recommend any one to take the ether under similar circumstances, expressing her gratitude to us for having applied it. No inconveniences have since followed, and the patient is convalescing as favourably as possible. It is of course impossible, from an isolated case, to draw any just conclusions as to the admissibility of this agent in parturition. This case, however, so far as it goes, is satisfactory; and if we can by any means alleviate the first curse, which has for so many ages been incidental to the parturient state, we shall confer the greatest boon on those who are deserving of all our sympathies, and worthy of our best energies."\*

Mr. Lansdown, of Bristol, has published the three following cases:

"Mrs. W——, æt. 36, was taken in labour of her fourth child. On the evening of the 8th inst. the pains subsided, until the evening of the 10th, when an arm was found presenting. All attempts to turn being prevented by the extreme rigidity and narrowness of the vagina, ether was administered, and the patient became insensible for two or three minutes, during which time a foot was seized and brought down. With returning consciousness the vaginal contraction reappeared; ether was again administered; but the rigidity of the uterus, which continued during the insensibility, prevented the completion of the labour. Fearing to continue the inhalation, it was abandoned from this time, and the case was allowed to terminate in the usual way."†

The next cases are more decidedly successful.

"Mrs. O——, in labour of her sixth child. Presentation natural, labour progressing favourably, but with exceedingly sharp pains. The ether was exhibited by Mr. Lansdown at the approach of every pain, during which she remained insensible. The contractions of the uterus were powerful; but although she apparently exerted herself during their persistence, she declared that she was perfectly unconscious of them. The head descended precipitately, but the perineum being fully relaxed, no injury occurred; the uterus contracted immediately after the placenta was expelled. The inhalation was continued in this case during three hours. The patient had no after-pains, which had been very severe in her former labours.

"Mrs. T——, æt. 35, in labour with her eighth child. Ether commenced when the head was in the vagina; three strong pains immediately followed, the last completing the expulsion of the child; the placenta was removed, and the woman remained dozing. In about five minutes she awoke, and began to regret the absence of her pains, being, as she said, convinced that she would have another tedious night unless they came on. When told that her child was born, she scarcely believed it, and affirmed that she had felt nothing, but had been in a pleasant dream. This patient likewise had no unpleasant symptoms."‡

Three cases of the successful employment of ether in midwifery, are also placed on record by Dr. Protheroe Smith.

The first case appears to have been a tedious labour with a first child, in a female æt. 40. The ether was exhibited at intervals during a period of nearly four hours, and although the patient to all appearance was sensible to every pain, she distinctly affirmed that she was unconscious of those which occurred during ethereal insensibility, while those which happened in the intervals gave her the usual amount of suffering. It became necessary to apply the short forceps, from the impaction of the head, which was done during a period of insensibility, and a living child was extracted. On regaining her senses, she continually expressed a hope that the child would soon be born. When informed of the termination of her troubles, she burst into an hysterical laugh, exclaiming, "It is a dream, it must

\* Med. Times, March 27.

† Lancet, April 24.

‡ Lancet, June 5, 1847.

be a dream! what a good thing it is that I had the ether," &c. Both mother and child did well in every respect.

The second case was that of a female, æt. 33, in labour with her seventh child. In this instance there was also impacted head from narrow oblique pelvis, and the child was delivered with the long forceps. The effect of the ether in the first instance was imperfect, as the patient did not inhale steadily, but towards the close complete insensibility was induced, and the labour was terminated without the slightest consciousness on the part of the patient. The after sufferings of this patient are described as less than in previous confinements.

The third and last case was also a forceps case, and in this complete unconsciousness to pain was the result of the inhalation. Dr. Smith states, that in this instance the effect of the ether was to materially increase the strength of the uterine and abdominal contractions. In this case also the woman uttered the usual cries of the last stage of labour, but positively denied having been aware of its termination.

The narrator terminates the narration of the above cases by an acknowledgment of the truth of the deductions of M. Dubois, viz:

- 1st. That ether prevents pains during obstetrical operations.
- 2d. That it does not suspend uterine or abdominal contractions.
- 3d. That it appears to lessen the natural resistance of the perineal muscles.
- 4th. That it does not appear to exert any bad influence on the life or health of mother or child.
- 5th. That it does not retard the subsequent contraction of the uterus.

The author adds, that he considers it probable that the temporary suspension of the pains, which has been observed in some instances to follow the use of ether, may be caused by the novelty of the means used, and is no more than may be produced by other emotions, as that which is so commonly known to follow the first appearance of the accoucheur.\*

Having thus given a brief account of the several cases in which, up to the present time (end of May), ether has been employed in practical midwifery, we have in the last place, to mention two or three other communications, which must be considered more or less opposed to the obstetrical use of this agent.

In a paper published in the "*Lancet*" (March 27), Dr. Tyler Smith investigates the action of ether in connection with the physiology of parturition. He examines the various parts which are taken respectively in that process, by *sensation*, *volition*, and *emotion*, and from the effects of ether upon these functions of the nervous system endeavours to determine its applicability in midwifery. That the pain of parturition may be obliterated by ether the author at once admits, but it does not appear to him so clear that the "shock" of labour is necessarily diminished, as, in his opinion "shock" is manifested not in the cerebral system only, but in the true spinal and ganglionic systems. This he demonstrates by the experiment of crushing the leg of a decapitated frog. Upon these considerations, he maintains that the "shock" of parturition may ensue even though the cerebral system be insensible to pain. This, if true, will, of course, considerably contract the limits of the usefulness of ether; but, if, as we believe is the case, "shock," though not necessarily, is generally attendant upon excessive pain; the annihilation of this pain will go far to diminish the chances of "shock." And, moreover, it will not be doubted that another cause of "shock," namely, mental depression, will be greatly controlled by the knowledge on the part of the woman that an agent is at her command which has the power of removing that agony, the dread of which is the basis of her despondency.

Dr. Smith, to our surprise, we confess, also advances the cases supposed to have been fatal from ether as a part of his arguments against inhalation in midwifery. We have already shown that there are no logical grounds for believing that death in those cases was the result of the ether; and it is, therefore, needless to repeat our opinions on that matter. So also with respect to the fluidity of the blood, which Dr. Smith subsequently refers to.†

Dr. Radford has published a communication, in which he more strongly condemns the use of ether in midwifery, though upon different grounds. His main

\* *Lancet*, May 1, 1847.

† *Ibid.*, March 27, 1847.

objection is founded upon the fact that in instrumental deliveries more particularly, as in lithotomy and lithotrity, the sensibility of the patient is the safeguard against injury of the soft parts; and he instances, as a possible contingency, the non-discovery, by the touch, of the os and cervix expanded over the head of the child, and its inclusion within the blades of the forceps. That such a mistake might occur cannot be denied; but if every measure is to be abandoned because its adoption may precipitate a bungler into error, we fear that many proceedings besides that of ether inhaling must be withdrawn from the list of therapeutical resources.\*

We now bring our Report on the subject of ether inhalation to a close, and in doing so beg to guard ourselves against the imputation of a premature admission of all that has been said in its favour. In the criticisms we have thought it right to make upon the various objections which have from time to time appeared, our sole intention has been to point out the *non sequitur* style in which the adverse argumentation has been conducted. We do not deny that other and more logical objections may, upon further experience, be justifiably adduced; but we do maintain that up to the present time no evidence of injurious effects has been brought forward, which ought to weigh against the accumulated testimony in surgery more particularly, which has caused many to regard the introduction of ether inhalation as one of the most merciful dispensations of Providence.

\* Lancet, April 7.



## BOOKS RECEIVED.

---

1. Manual of Ophthalmic Medicine and Surgery. By Wharton Jones, F.R.S.
2. Observations on the History and Treatment of Dysentery. By W. Harty, M.D. 2d Edition. pp. 302.
3. On Tumours of the Uterus and its Appendages. By Thomas Safford Lee, M.R.C.S. pp. 274.
4. Body and Soul, or Life, Mind, and Matter. By George Radford, M.R.C.S. pp. 232.
5. Conseils aux Mères sur l'Allaitement. Par M. Donne. pp. 330.
6. On Digestion and certain Bilious Disorders conjoined with it, with Short Notes on Diet. By George Child, M.D. pp. 218.
7. Treatise on Diet and Regimen. By W. H. Robinson, M.D. Parts I. & II.
8. Practical Observations on some of the Diseases of the Stomach and Alimentary Canal. By Dr. Alderson. pp. 215.
9. Observations on Lateral Curvature of the Spine. By Edward Lonsdale, F.R.C.S. &c. pp. 116.
10. The Preservation of Infants in Delivery, being an Exposition of the chief causes of Mortality in Still-born Children. By Richard King, M.D. pp. 62.
11. The Construction and Government of Lunatic Asylums. By John Conolly, M.D. pp. 183.
12. The Human Ear, with New Views of the Physiology of the Tympanum, &c. pp. 18.
13. Treatise on the Structure, Diseases, and Injuries of Blood-vessels. By Edwards Crisp, M.R.C.S. pp. 354.
14. On Dyspepsia, &c. By John Burdett Steward, M.D. pp. 106.
15. Observations on Aneurism, and its Treatment by Compression. By Dr. O'Bryan Bellingham. pp. 181.

## PAMPHLETS.

1. Practical Treatise on Ether Inhalation. By G. Robinson.
2. Practical Remarks on the Inhalation of the Vapour of Ether. By W. Philpot Brookes, M.D. pp. 68.
3. Inhalation of Ether. By John Mason Warren, M.D., U.S. pp. 18.
4. Statistics of the Royal Infirmary of Glasgow. By Dr. Orr. (Reprint from Edin. Med. and Surg. Journ.)
5. Essay on the Prevalence of Venereal Disease. By Dr. Hall, Glasgow.
6. Hassall's Microscopic Anatomy, Nos. v, vi, vii, viii.
7. On the Sanitary Condition of Newcastle-on-Tyne. By Dr. Robinson. pp. 58.
8. Observations on Cancer. By Dr. Hughes Bennett. (Reprint from Monthly Journal.)
9. On the Nature and Source of the Contents of the Fœtal Stomach. By Dr. Robinson. (Ditto.)
10. Chemical Examination of the Urinary Calculi in the Museum of the Transylvania Hospital. By Dr. Peters.
11. Annual Report of the Suffolk Lunatic Asylum. By Dr. Kirkman.
12. Annual Report of the Crichton Royal Institution, Dumfries. By W. E. Browne, M.D.
13. Case of Spina Bifida, in which the External Tumour was successfully Removed. By W. E. Page, Esq. pp. 7.
14. Case of Large Secondary Prostate Calculus removed by Perineal Incision. By Herbert Barker, Esq. (Reprint from Transactions of the Prov. Association.) pp. 12.
15. Vaccination Considered in Relation to Public Health. By John Marshall, Surgeon. pp. 34.

16. Pathology and Treatment of Dysentery. By Dr. Baly. (Reprint.) pp. 33.

January, February, March, April, May, June.

Dublin Quarterly Journal of Medical Science. February, May.

Pharmaceutical Journal. January, February, March, April, May, June.

American Journal of the Medical Sciences. October 1846, January 1847.

British American Journal of Medical Physical Science. From January.

Medical Times. From January.

Chemist. From January.

---

IN EXCHANGE.

British and Foreign Medical Review.  
January, April.

Monthly Journal of Medical Sciences.

# INDEX TO VOL. V.

	PAGE
Abdomen, wounds of - - - - -	116
injuries and diseases of - - - - -	206
Abortion, trial for attempt to procure - - - - -	325
Abscess of the neck communicating with the aorta - - - - -	81
scrofulous, iodine injections in - - - - -	185
of the mastoid cells - - - - -	232
ACTON, Mr., case of malformation by - - - - -	257
After-pains, treatment of - - - - -	151
Albumen, Mulder's opinion as to its composition - - - - -	264
peculiar conditions of, in urine - - - - -	285
ALDERSON, Dr., notice of work by, on diseases of the stomach - - - - -	181
on cancer of the digestive organs - - - - -	ib.
on hypertrophy of the stomach - - - - -	ib.
ALISON, Mr., on chlorate of potash in salivation - - - - -	45
Alkaline sulphurets, acetate of zinc, an antidote in poisoning by the - - - - -	294
Alum, insufflation of in epistaxis - - - - -	40
pertussis - - - - -	154
Amenorrhœa, chenopodium olidum in - - - - -	131
singular instance of - - - - -	241
Ammonia, in the urine, estimation of - - - - -	283
Amputation of the penis, new modes of - - - - -	98
of the shoulder-joint for axillary aneurism - - - - -	107
Anæmia, fatal case of - - - - -	179
Aneurism, coagulation of the blood in, by heat - - - - -	102
spontaneous cure of - - - - -	189
of the basilar artery - - - - -	ib.
by anastomosis of the anterior nares, cured by the actual cautery - - - - -	115
galvanism in the treatment of - - - - -	196, 197
Angina pectoris, pathology of - - - - -	177
treatment of - - - - -	41
Antidote, a general, for poisoning with metallic preparations and com- pounds of cyanogen - - - - -	309
Antimony, tartrates, poisoning by - - - - -	299
Anus, fissure of, treatment - - - - -	113
Aorta, abscess of the neck communicating with - - - - -	81
disease of the arch of, simulating valvular disease - - - - -	179
Argentum nitras, various modes of using in gonorrhœa - - - - -	223
Arachnitis, and delirium tremens, diagnosis of - - - - -	32
ARNOTT, Dr. C. D., on the ectrotic treatment of gonorrhœa - - - - -	222
Arsenious acid, small poisonous dose of - - - - -	294
antidotes to - - - - -	295
tests for - - - - -	297
trials for poisoning by - - - - -	324
Arsenical stain, new mode of distinguishing - - - - -	297



	PAGE
Artery, posterior tibial, rupture of	87
Arthritis, gonorrhœal	226
Ascites, state of the urine in	50
Atropine in neuralgia	185
Auditory canals, congenital imperforation of	240
Aural surgery, report on	230
AUSTIN, Mr., new test for prussic acid	307
BABO and FRESSENIUS, new process for detecting arsenic in animal textures	297
BAINBRIDGE, Mr., successful case of ovariectomy by	250
BALY, Dr., on epidemic dysentery	182
BANNER, Mr., case of poisoning by extract of belladonna	309
BARKER, Mr., case of secondary prostatic calculus	119
BASHAM, Dr., lecture on erysipelas by	22
on insidious inflammation of the intestines	48
BAUDENS, M., on the use of ether vapour in feigned diseases	320
BECCUEREL and RODIER, on the chemical composition of healthy and diseased blood	265
BEGBIE, Dr., on the relations of rheumatism and chorea	35
Belladonna, inunction of in the vomiting of pregnancy	252
berries, cases of poisoning with	309
extract of, poisoning by	ib.
BELLINGHAM, Dr., on the employment of heat to coagulate the blood in an aneurismal sac	102
on galvanism in the treatment of aneurism	196
on disease of the arch of the aorta simulating valvular disease	179
BENNETT, Dr. HENRY, on inflammatory ulceration of the uterine neck during pregnancy	144
BENSCH, on the presence of sugar in the milk of carnivora	281
BENNETT, Dr. HUGHES, on the causes of exudation	162
on cancer	165
on fibrous tumour	164
BIBRA, VON, analysis of carious bone by	287
BIGGAR, Dr., on tracheotomy in croup	259
Bile, Dr. Kemp's researches on the presence of sulphur in	278
colouring matter of	279
list of recent memoirs on	280
BIRD, Dr. F., on the pathology of ovarian dropsy	248
Bismuth in diarrhœa	50
Bitter almonds, poisoning with the essential oil of	308
water, trial for poisoning by	324
Bleeding from the foot	217
Blisters, to prevent pitting in smallpox	65
Blood, chemistry of	265
controversy respecting the salts of	269
effects of venesection on	271
presence of sugar in healthy	ib.
in scrofula, composition of	274
in diseases of the spinal cord	275
in morbus Brightii	276
detection of urea in	277
diabetes, presence of sugar in	ib.
of fowls, abundance of silica in	ib.
effects of ether on	335
Bones, effects of prolonged interment upon	287
carious, analysis of	ib.
BONNAFONT, M., on the treatment of otorrhœa	233
case of imperforate auditory canals by	240
BRADY, Dr., case of tetanus relieved by ether vapour	340
Brain, removal of a portion for cancer	126

	PAGE
BRANSON, Dr., on epilepsy	170
BRESCIANI, M., on the cure of old ulcers	199
BRETONNEAU, M., on inunction of belladonna in the vomiting of pregnancy	252
BRETT, Dr., on urinary calculi	209
BRODIE, Sir B., on the treatment of distortions not connected with caries	97
Bronchitis, chronic, treatment of	38
Bronchocele, chemical analysis of	291
BROUGHTON, Mr., case of tetanus relieved by ether	340
Bruit, venous, Dr. SYLVESTER on the	40
BRULET, M., on hypertrophy of the septum narium	100
BUCK, Dr., on excision of the elbow-joint for caries	95
BUDD, Dr., on cynanche laryngea	172
BURD, Mr., successful case of ovariectomy by	249
BURNS, treatment of, by cold water	198
distinction between before and after death	323
BURROWS, Dr. GEORGE, on tubercular pericarditis	42
BUSHNAN, Dr., remarks by, on the progress of surgery	186
BUSK, Mr., case of abscess of the neck communicating with the aorta	81
BUSSY, M., on magnesia as an antidote to arsenic	295
BUTCHER, Dr., on puncture of the membrana tympani	234
Button-scurvy	60
Cæsarean operation fatal	257
successful to the mother	ib.
Calculus, urinary	209
Dr. PETERS on	290
secondary prostatic, case	119
of the lower animals	290
CAMPS, Dr., on a remarkable case of amenorrhœa	241
Cancer, diagnosis of	168
treatment of	169
of the digestive organs	181
of the cervix uteri, excision of	136
analysis and microscopical examination of the blood in	273
CANSTATT, M., on tapping and on excision of the cyst in ovarian dropsy	248
Carbonic acid, poisoning by	311
diffusion of, in a room	312
Catarrh, uterine, treatment of	131
CATTELL, Mr., on the treatment of after-pains	151
CAZENAVE, M., on the treatment of syphilitic diseases of the skin	61
Cervical vertebræ, fracture of	83
Cervix uteri, amputation of, for cancer	136
inflammatory ulceration of, during pregnancy	144
salivation from cauterizing the, with acid nitrate of mercury	145
incision of, in dysmenorrhœa	241
CHAILLY, M., case of the employment of ether in labour	345
CHAMBERS, Dr., on the treatment of diabetes	51
on the treatment of enuresis	154
CHELIUS, Dr., on paraphimosis of the clitoris	228
Chenopodium olidum in amenorrhœa	131
Chest, treatment of lateral depression of	118
CHILD, Dr., notice of work on indigestion	180
on the treatment of dyspeptic headache	45
Children, stillborn, causes of mortality of	258
Chlorosis, treatment of	130
Chorea and rheumatism, relation of	35
Cicatrices, contracted, treatment of	198
can they be obliterated	313
Clavicle, fractured, treatment of	203
Clitoris, paraphimosis of, from gonorrhœa	228

	PAGE
COLAMBELL, Mr., on a fatal case of anæmia	179
Cold water, treatment of fever by	18
signs of death by	323
COLES, Mr., notice of work by, on spinal affections	203
Colica pictorum, treatment of	47
ether inhalation in	313
COLLES, Mr., on the diagnosis of fracture of the carpal extremity of the radius	78
Conium, poisoning by	310
COOPER, Mr., case of ligature of the external iliac artery	190
COPLAND, Dr., on fracture of the cervical vertebræ	83
Corrosive sublimate, poisoning by	297
COTTEREAU, M., new mode of distinguishing the arsenical stain	ib.
COTTMAN, Dr., on injuries of the membrana tympani	235
Cramp during sleep, prevention of	172
CRAMPTON, Sir P., on lithotomy	210
Creatine, a constituent of urine	283
LIEBIG's researches on	287
CRAWFORD, Dr., on the external use of tincture of iodine to prevent pitting in smallpox	66
CRISP, Mr., on infantile pleurisy	261
CROSSE, Mr., on inversion of the uterus	137
cases of ligature of the iliac artery	192
dissection of the ears of a deaf and dumb person	239
Croup, pathology and treatment of	153
tracheotomy in	259
Cynanche laryngea, erysipelatous nature of	172
DAVID, Dr., on fracture of the sacrum	203
DAVIDSON, Dr., Case of poisoning by carbonic acid	311
DAVIES, Dr., remarks on fever by	17
on alum in pertussis	154
DAY, Mr., case of poisoning by belladonna berries	309
Deafness, from deficiency of cerumen	236
atony of the auditory nerve	237
cure of, by galvanism	ib.
Deaf and dumb person, dissection of the ears of	239
DEBENEY, Dr., on various modes of using nitrate of silver in gonorrhœa	223
Delirium tremens, Mr. PHILLIPS on	25
natural history of	28
and arachnitis, diagnosis of	32
Delivery, unconscious, cases of	315
concealed	316
DEMARQUAI, M., on rupture of the triceps cruralis muscle	200
DENDY, Mr., on caries of the mastoid process	231
Diabetes, treatment of	51
Diarrhœa, bismuth in	50
DICK, Dr., on the treatment of colica pictorum	47
DIDAY, M., on the treatment of fissure of the anus	113
DIEFFENBACH on a new operation for pseudarthrosis	111
rhinoplastic operation by	114
on complicated autoplasic, operation by	124
Director, new form of, in lithotomy	214
Dislocations, partial, of the humerus and femur	85
spontaneous, of the hip-joint, with reduction	ib.
of the humerus, new variety of	86
reduction of	111
DIXON, Mr., case of neuralgia cured by trephining	94
DUBINI, M., on the signs of incipient phthisis	40
DUBOIS, M., on the use of ether in midwifery	345
Ductus arteriosus and venosus, remarks on closure of	319



	PAGE
DUPUYTREN, M., on the diagnosis of luxation and fracture of the head	
of the humerus	79
on partial dislocations of the humerus and femur	85
on the treatment of lateral depression of the walls of the chest	118
notice of work by, on the diseases of bones	189
DURRANT, Dr., on the use of opium in inflammation	75
Dysentery, notice of Dr. Harty's work on	182
epidemic of, in the Penitentiary	ib.
Dysmenorrhœa, observations on	127
incision of the cervix uteri in	241
Dyspepsia, Dr. CHILD on	180
Ear, pathological observations on the	231
disease of, case	232
polypus of	236
hemorrhage from	ib.
treatment of nervous affections of	237
malformations of	ib.
of a deaf and dumb person, dissection of	239
Ecchymosis, violence not always followed by	322
Elbow-joint, excision of the	95
Electro-magnetism in poisoning by opium	300
Electro-puncture, cure of varices by	110
Endocarditis and pericarditis, results of	175
Eneuresis, treatment of	154
Epilepsy, treatment of	170
Epistaxis, insufflations of alum in	40
Erethismus mercurialis	71
Erysipelas, clinical lecture on	22
ESPINE, Dr., on catheterism of the Eustachian tube	233
Ether, inhalation of, report on	327
prior use of	328
history of re-discovery of	329
originality of, disputed	ib.
general effects of	333
sulphuric, mode of preparing	330
apparatus for inhaling, description of	ib.
vapour, table of volumes of, contained in air at different temperatures	331
mode of exhibiting	332
precautions necessary	ib.
oxygen as an antidote to	ib.
exhibition of, by rectum	333
time required to produce insensibility by	334
Ether vapour, duration of insensibility	ib.
physiological effects of	ib.
effects of on the blood	335
objections to the employment of considered	ib.
fatal cases from, reviewed	337
use of in surgery	338
in medicine	339
in tetanus	ib.
in insanity	341
in neuralgia	ib.
in asthma	ib.
laryngismus stridulus	ib.
in midwifery, Dr. SIMPSON's cases	342
cases by DUBOIS, BOUVIER, LATHAM, &C.	345
Eustachian tube, catheterism of	233
Exostoses, treatment of	103

	PAGE
Exudation, causes of	162
Eye-ball, inflammation of from gonorrhœa	228
Face, remarkable deformity of cured by plastic operations	124
Feigned diseases, ether inhalation in	320
Femur, partial dislocation of	85
dislocation of, reduction	111
FERGUSSON, Mr., case of strangulated congenital hernia in an infant seven days old	101
Fever, remarks on	17
treatment of, by cold water	18
epidemics of	163
intermittent	ib.
iodine in	ib.
Fibro-plastic tissue	164
Fibrous tumour	ib.
of the uterus	242
Fistula in perineo, autoplasty in	217
FLEMING, Dr., case of poisoning with prussic acid	301
FLOURENS, M., on the physiological effects of ether	335
Fœtus, malformations of	257
Foramen ovale, diagnosis of hernia of	80
FOUCART, M., on gonorrhœal arthritis	226
FOWLER, Mr., case of ligature of the external iliac artery	192
Fracture, of the carpal extremity of the radius, diagnosis of	78
of the upper cervical vertebræ, cases	83
of the surgical neck of the humerus	84
of the upper extremity of the humerus traversing the bicipital groove	ib.
FULLER, Mr., case of spontaneous gangrene, from obstructions in the abdominal aorta	92
Galvanism in the cure of aneurism	196
Gangrene, spontaneous, of the lower extremities	92
GARDNER, Dr., (U. S.) case of prolapsus uteri complicated with pregnancy	252
Gastric Juice, researches in, proving the existence of free lactic acid	280
Gastrotomy in ovarian dropsy, results of	246
GELY, M., on the treatment of wounds of the intestines	206
GERDY, M., on the treatment of surgical diseases, by elevation of the diseased part	187
Gestation, protracted, instance of	315
Glands, lymphatic, hypertrophy of	218
Gleet, treatment of	226
GLOVER, Dr., on the composition of the blood in scrofula	274
analysis of scrofulous pus	282
GLUGE on morbus Brightii	183
Gonorrhœa, nature of	219
treatment of acute and chronic stages of	225
results of inoculation in	220
ectrotic treatment of	221
internal treatment of	224
hygienic treatment of	225
GORUP-BESANEZ, researches on the chemistry of the bile	280
analysis by, of the mucus of the gall bladder	282
GRANTHAM, Mr., diagnosis of rupture of the tendons of the triceps cruralis muscle	79
GRIESINGER, M., on hydatids of the heart	179
GUERSENT, M., on polypi of the rectum in the infant	155
GULL, Dr., denial by, of the use of oxygen as an antidote to ether vapour	322
GUTHRIE, M., on wounds of the abdomen	116
Hæmorrhage, cerebral, diagnosis of	33
from the bowels, matico and senna in	50

	PAGE
Hæmorrhage, uterine, on the natural suppression of - - -	146
treatment of by stimulating injections - - -	253
HAKE, Dr., on a successful mode of treating prolapsus ani - - -	99
Hare-lip, operation for, seven hours after birth - - -	218
HARRISON, Mr., case of ligature of the external iliac artery - - -	190
HARTLEY, Mr., case of poisoning by tartar emetic - - -	299
HARTY, Dr., notice of work by, on dysentery - - -	182
HAWKINS, CÆsar, Esq., on ovariotomy - - -	247
HAWTHORN, Mr., on the treatment of spina bifida by puncture and pressure - - -	105
Headache, varieties of - - -	33
dyspeptic, treatment of - - -	45
HEADLAND, Mr., on the causes of laryngismus stridulus - - -	260
Heart, notice of Dr. Latham's second volume on diseases of - - -	175
inflammation of the muscular substance of - - -	176
fatty - - -	ib.
hypertrophy and dilatation of - - -	ib.
sudden death in disease of - - -	177
hydatids of the - - -	179
valves of, rupture of - - -	178
HELLER, on the microscopic characters, &c., of the blood in cancer - - -	273
on the colouring matters of the urine - - -	282
Hernia, ovarian, diagnosis of - - -	78
and varicocele, diagnosis of - - -	ib.
of the foramen ovale, diagnosis of - - -	80
muscular - - -	88
strangulated congenital in an infant seven days old - - -	107
HERSENT, M., on the analysis of the blood in puerperal fever - - -	273
HERTZVELD, M., on the purulent diathesis - - -	188
HEYLEN, M., on resection of the cartilages of the septum nasi - - -	100
Hip-joint, spontaneous dislocation of—reduction - - -	85
HIRD, Mr., on the pathology and treatment of croup - - -	153
HOUGHTON, Mr., case of poisoning by arsenious acid - - -	294
HUBERT, Mr., on the treatment of nervous affections of the ear - - -	237
HUDSON, Dr., on a case of spontaneous separation of the pelvic bones during labour - - -	152
HUGHES, Dr., on a remarkable case of chronic pleurisy - - -	173
Humerus, diagnosis of luxation, and fracture of the head of - - -	79
fracture of the surgical neck of - - -	84
fracture of the upper extremity of, traversing the bicipital groove - - -	84
partial dislocation of - - -	85
new variety of dislocation of - - -	86
HUTTON, Dr., on disease of the ear - - -	232
Hydatids of the heart - - -	179
uterine - - -	252
Hydrocele, comparative view of various injections in - - -	217
case cured by electro-magnetism - - -	ib.
Hydrocyanic acid, poisoning by - - -	300
experiments with on animals - - -	302
circumstances which influence the activity of - - -	303
oxide of iron an antidote to - - -	305
new tests for - - -	307
Iliac artery, external, ligature of cases - - -	190
statistics of ligature of - - -	192
IMAGE, Mr., case of arsenical poisoning by - - -	324
case of laryngismus stridulus relieved by ether vapour - - -	341
Inflammation, general doctrines of - - -	159
opium in - - -	73
Injections, uterine, objections to - - -	242
in hydrocele, comparative view of - - -	217
Insanity, homicidal - - -	322



	PAGE
Insanity, ether vapour in - - - - -	341
Intestines, insidious inflammation of - - - - -	48
treatment of wounds of - - - - -	206
suture in wounds of - - - - -	208
treatment of wounds of by invagination - - - - -	ib.
"Invagination," treatment of wounds of the intestines by - - - - -	ib.
Iodide of potassium, physiological action of - - - - -	229
Iodine, liniment in bowel complaints - - - - -	50
injections in scrofulous abscesses - - - - -	185
tincture of, external use of to prevent pitting in smallpox - - - - -	65
in intermittent fever - - - - -	164
Iron sesquioxide, in arsenical poisoning - - - - -	296
JACKSON, Dr., claims of to the discovery of ether inhalation - - - - -	329
on the preparation of pure ether - - - - -	330
JACOB, Dr., on inflammation of the eyeball from gonorrhœa - - - - -	228
JOBERT, M., on the treatment of burns by cold - - - - -	198
on the treatment of wounds of the intestines by invagination - - - - -	208
on the cure of fistula in perineo by urethroplasty - - - - -	217
Joints, removal of loose cartilages from - - - - -	113
JONES, Dr. BENICE, on the variations in the phosphates in the urine - - - - -	284
on the diagnosis of delirium tremens and trachnitis - - - - -	32
Mr. WHARTON, on gonorrhœal ophthalmia - - - - -	227
KEMP, Dr., on the presence of sulphur in bile - - - - -	278
KENNEDY, Dr., on uterine catarrh - - - - -	131
on some congestive, inflammatory, and ulcerative conditions of the os and cervix uteri - - - - -	133
KIDD, Mr., case of ligature of the external iliac artery - - - - -	191
KING, Dr. RICHARD, on the cause of the mortality of still-born children - - - - -	258
Mr. G., case of unconscious delivery - - - - -	315
KIRBY, Mr., on the spontaneous cure of aneurism - - - - -	189
Labour, complicated with prolapsus uteri - - - - -	252
influence of sex of the child on - - - - -	ib.
employment of ether inhalation in - - - - -	342
injuries caused during - - - - -	316
separation of the pelvic bones during - - - - -	152
LA CAVA, on the detection of urea in the blood - - - - -	277
LAISSAIGNE, M., on the effects of ether on the blood - - - - -	335
LANSDOWN, Mr., cases of labour in which ether was successfully employed - - - - -	346
LAROCQUE, M., on acetate of zinc in poisoning by the alkaline sulphurets - - - - -	294
Laryngismus stridulus, pathology and treatment of - - - - -	260
ether vapour in, case - - - - -	341
Larynx, polypus successfully extracted from - - - - -	109
LATHAM, Dr., on the treatment of angina pectoris - - - - -	41
on the consequences of endocarditis - - - - -	175
on softened and fatty heart - - - - -	176
on hypertrophy and dilatation of the heart - - - - -	ib.
on the pathology of angina pectoris - - - - -	177
Mr., case of use of ether in labour - - - - -	345
Laudanum, inhalation of, in the vomiting of pregnancy - - - - -	252
LAYCOCK, Dr., on the diseases arising from the immoderate use of tobacco - - - - -	76
Lead, normal existence of, in the body - - - - -	299
impregnation of water-pipes with sugar of - - - - -	ib.
salts of, poisoning by - - - - -	ib.
LEE, Mr. SAFFORD, notice of work by, on uterine tumours - - - - -	242
on the treatment of uterine tumours - - - - -	141
Dr. T. S., evidence by, of the erysipelatous nature of puerperal fever - - - - -	256
Dr. ROBERT, additional cases of placenta prævia - - - - -	257
Leech-bites, method of arresting bleeding from - - - - -	77
LEGENDRE, M., on tubercular meningitis - - - - -	259

	PAGE
LEHMANN on the presence of free lactic acid in the gastric juice - -	280
LEROT, M., (D'ETIOLLES) on a new system of lithotripsy - - -	215
LETHEBY, Dr., case of poisoning by sulphuric acid - - -	293
case of poisoning by $2\frac{1}{2}$ grains of arsenious acid - - -	294
Leucorrhœa, treatment by uterine injections - - -	132
LIEBIG, researches on creatine - - -	287
new test for prussic acid - - -	307
LISTON, Mr., on the removal of loose cartilages from the knee-joints -	113
Lithotomy - - -	210
Sir P. CRAMPTON's operation for - - -	211
in women - - -	213
Lithotripsy, new system of - - -	215
opinions on, by LENOIR, VIDAL, ROUX, &c. - - -	216
LOMBARD, Dr., on sudden death in heart diseases - - -	177
LONGET, M., on the physiological effects of ether - - -	334
LOWE, Mr., case of poisoning with prussic acid - - -	300
Lupus, local treatment of - - -	200
Lymph, analysis of - - -	277
M'DIARMID, Mr., on iodine liniments in bowel complaints - - -	50
M'DONALD, Mr., on the ectrotic treatment of gonorrhœa - - -	222
M'LAGAN, Dr. DOUGLAS, on the pathology of urticaria - - -	67
Magnesia, an antidote to arsenious acid - - -	295
MALGAIGNE, M., on bleeding from the foot - - -	217
MARSH, Sir H., on the treatment of chlorosis - - -	130
MARSH's apparatus, proposed modification of - - -	297
MARSHALL, Dr., (Belfast) on arresting bleeding from leech-bites -	77
Matico and senna, in melæna - - -	50
Medicines, effect of, on the urine - - -	286
Membrana tympani, puncture of - - -	234
Membrana tympani, injury of - - -	235
Meningitis, tubercular - - -	258
Mercury, diseases arising from the injurious action of - - -	68
METTAUER, M., on a new form of gorget - - -	214
MICKLETHWAIT, Mr., on rupture of the posterior tibial artery, fatal from phlebitis after amputation - - -	87
Midwifery statistics - - -	257
cases of ether inhalation in - - -	342
Milk of carnivora, presence of sugar in - - -	281
human, green colour of - - -	282
MITCHELL, Dr., on the treatment of leucorrhœa by uterine injections -	132
MORAND, M., on arresting bleeding from leech-bites - - -	77
MORTON, Dr., claim of to the discovery of ether inhalation - - -	329
MOORE's test, fallacy of - - -	286
Morbus Brightii, notice of GLUGE's work on - - -	183
Mr. TOYNBEE on - - -	184
composition of the blood in - - -	276
MORRIS, Mr., cases of neuralgia treated by ether inhalation - - -	341
Mucus of the gall-bladder, analysis of - - -	282
MULDER, defence of the protein theory by - - -	262
on the compositions of casein, albumen, and fibrin - - -	264
on the bile - - -	279
MUNRO, Dr. W., case of ligature of the external iliac artery - - -	190
Myo-tenotomy, rules for - - -	202
NEUMANN, M., on myo-tenotomy - - -	ib.
Neuralgia and neuritis, diagnosis of - - -	34
atropine in - - -	185
cured by trephining - - -	94
ether vapour in - - -	341
Nitric acid, case of poisoning by - - -	293
NORRIS, Dr., on the statistics of ligature of the iliac arteries - - -	192

	PAGE
Nose, gonorrhæal discharge from - - - - -	228
NUNNELEY, Mr., experiments on animals with prussic acid - - - - -	302
OGIER, Dr., on the cure of hydrocele by electro-magnetism - - - - -	217
Oil, effects of in zinc vessels - - - - -	300
OKE, Dr., on a new and easy method of applying a ligature to uterine polypi - - - - -	143
OLDHAM, Dr., on dysmenorrhœa - - - - -	127
on the dangers of uterine injections - - - - -	242
Opium, use of in inflammation - - - - -	73
electro-magnetism in poisoning by - - - - -	300
Ophthalmia, gonorrhæal - - - - -	227
Otorrhœa, treatment of - - - - -	233
Ovarian tumour - - - - -	244
symptoms of - - - - -	245
diagnosis of - - - - -	ib.
surgical treatment of - - - - -	246
pathology of - - - - -	248
Ovariectomy, opinions on by MESSRS. LEE, CÆSAR HAWKINS, CANSTATT, &c. - - - - -	246
successful cases of - - - - -	249
fatal cases of - - - - -	251
Oxalic acid, poisoning by - - - - -	293
PAGE, Mr., case of spina bifida cured by operation - - - - -	122
fatal case of ovariectomy by - - - - -	251
PAGET, Dr., on morbid rhythmical movements - - - - -	171
PARKER, Dr. on lithotomy in China - - - - -	210
Mr., case of calculus formed on a hair pin - - - - -	209
Parsnep, the common, poisoning by - - - - -	310
PAYEN, M., on the physiological action of iodide of potassium - - - - -	229
Pelvimeter, new - - - - -	133
Penis, new modes of amputating - - - - -	98
Pericarditis, tubercular - - - - -	42
Pericardium, phthisical cavity opening into - - - - -	173
Personal identity in the dead and living - - - - -	313
proved by a wound - - - - -	ib.
Pertussis, alum in - - - - -	154
PETERS, Dr., account of urinary calculi in the Museum of Transylvania - - - - -	290
PETREQUIN, M., on galvanism in the cure of aneurisms - - - - -	197
PHILLIPS, Mr., on delirium tremens - - - - -	25
Phlegmasiæ, analysis of the blood in - - - - -	272
Physical diagnosis, notice of Dr. TURNBULL'S work on - - - - -	172
Phthisis, signs of incipient - - - - -	40
analysis of the blood in - - - - -	273
PRIORRY, M., on the use of blisters in smallpox - - - - -	65
Placenta prævia, treatment of - - - - -	145
general principles of the treatment of by Prof. SIMPSON - - - - -	253
Dr. LEE'S cases - - - - -	257
Pleurisy, treatment of - - - - -	36
chronic, remarkable case of - - - - -	173
infantile - - - - -	261
Policies, decision respecting after suicide - - - - -	326
Pneumonia, latent - - - - -	39
Polypus of the larynx successfully extracted - - - - -	109
uterine, new method of applying a ligature to - - - - -	143
of the rectum in infants - - - - -	155
of the ear - - - - -	236
PORTER, Dr., on the syphilitic diseases of the skin - - - - -	51
on the diseases arising from the injurious action of mercury - - - - -	68
lectures on syphilis, extracts from - - - - -	89
Potass, hydriodate, to remove stains of nitrate of silver - - - - -	67
physiological action of - - - - -	229



	PAGE
Pregnancy, inflammation and ulceration of the cervix uteri during	144
vomiting during	252
complication of with prolapsus uteri	ib.
with ovarian disease	249
supposed	314
Prolapsus ani, new mode of treating	99
cure of without operation	112
uteri, complicated with pregnancy	252
Protein, disbelief in the existence of	262
defence of the existence of	ib.
MULDER's direction for obtaining	ib.
Pseudarthrosis, new operation for	111
Psoriasis, diagnosis of	79
Puerperal fever, additional evidence of its erysipelatous nature	256
analysis of the blood in	273
Purulent diathesis, nature of	188
QUAIN, Dr. ROBERT, on rupture of the valves of the heart from exertion	178
Quinine, large doses of in intermittent fever	163
RADFORD, Dr., on the treatment of placenta prævia	145
on the natural suppression of uterine hemorrhage	146
Radius, diagnosis of fracture of the carpal extremity of	78
RAGSKY on the quantitative determination of the urea and uric acid in the urine	283
RAMSBOTHAM, Dr., on ulceration of the lining membrane of the uterus	242
RANKING, Dr., on the use of opium in inflammation	73
Rape on an idiot, trial for	326
RAYNAUD, M., extrication of a needle from the urethra by a new method	106
Rectum, polypus of, in the infant	155
administration of ether by	333
REES, Dr. G. O., on the fallacy of Dr. MOORE's test for sugar in diabetic urine	286
REID, Dr., on the nature and treatment of laryngismus stridulus	261
Rheumatism and chorea, relations of	35
treatment of	36
Rhinoplastic operations	114
Rhythmical movements, morbid	171
RICORD, M., on the origin of syphilis	218
on the ectrotic treatment of gonorrhœa	221
RILLIET, M., on tubercular meningitis	258
RIZZI, Dr., on the contagion of secondary syphilis	219
RIZZOLI, M., on a new mode of amputating the penis	99
ROBINS, Mr., case of suspected poisoning by	321
ROBINSON, Dr., on inflammation	159
Mr., description of ether inhaler	330
RÆSER, Dr., on the diagnosis of hernia of the foramen ovale	80
on a new variety of dislocation of the humerus	86
ROSE, Mr., case of supposed ulceration of the uterine cavity	242
ROSTAN, M., on the diagnosis of cerebral hemorrhage	33
on the abscess of the mastoid cells	232
ROUX, M., on the treatment of exostoses	103
Sacrum, fracture of the	203
Saliva, healthy, chemical researches on	278
morbid	ib.
Salivation, chlorate of potass in	45
new remedy in	ib.
from cauterizing the os uteri with the acid nitrate of mercury	145
SCHWERER, Professor, midwifery statistics by	257
Scrofula, diagnosis of	51
composition of the blood in	274
Scrofulous pus, analysis of	282

	PAGE
Scrofulous abscesses and fistulæ, iodine injections in	185
Seminal spots, detection of	314
SEMPLE, Mr., cases of neuralgia treated by ether vapour	341
Septum narium, treatment of hypertrophy of the	100
Serum, healthy, physiological characters of	267
ZIMMERMAN'S researches on	ib.
variation of the amount of water in	ib.
colouring matters of	ib.
means by which it dissolves albumen	268
soluble salts in	ib.
SEWELL, Dr., case of protracted gestation	315
SIBSON, Mr., on the fever of Nottingham	163
SIMPSON, Professor, on excision of the cervix uteri for carcinoma	136
on excision of the cervix uteri in dysmenorrhœa	241
on the inhalation of laudanum for the vomiting of pregnancy	252
on spontaneous evolution	252
on the general principles of treatment in placenta prævia	252
on the inhalation of ether vapour in obstetrical practice	342
SKEY, Mr., fatal Cæsarean operation by	257
Skin, syphilitic diseases of	51
treatment of	61
Skin, removal of the stains of nitrate of silver from	67
diseases, notice of Mr. WILSON'S work on	184
Smallpox, prevention of pitting in	65
SMITH, Mr. R., on fracture of the head of the humerus	84
Dr. P., cases of the successful use of ether in labour	346
SNOW, Dr., his inhaler described	331
SOUTHAM, Mr., fatal case of ovariectomy	252
Spina bifida, cure of by operation, case	122
treatment of by puncture and pressure	105
Spine, distortions of unconnected with caries	97
affections of, notice of Mr. COLES'S work on	203
composition of the blood in diseases of	275
Spontaneous evolution	252
STALLARD, Mr., on the treatment of fever by cold water	18
STARTIN, Mr., description of ether inhaler	330
Statistics of midwifery	257
of ligature of the iliac arteries	192
Strangulation, state of the blood in	321
homicidal and suicidal	ib.
Sublingual region, foreign body in	87
Suffocation without external marks	321
Sugar in diabetic urine, fallacy of MOORE'S test for	286
in healthy blood	271
in diabetic blood	277
in milk of carnivora	281
Sulphuric acid, poisoning by, cases	292
Superfœtation, instance of	315
Surgical adjuster	218
SWEET, Dr., on the treatment of pleurisy	36
SYLVESTER, Dr., on the venous bruit	40
SYME, Professor, case of amputation at the shoulder-joint for axillary aneurism	107
on reduction of dislocations of the humerus and femur	111
Syphilis, extracts from Dr. PORTER'S lectures on	89
on the origin of	218
secondary, contagion of	219

	PAGE
Tapping, results of in ovarian dropsy - - - -	246
CANSTATT'S opinion of - - - -	248
Tartar emetic, poisoning by - - - -	299
TATHAM, Mr. GEORGE, case of poisoning by sulphuric acid - -	292
TAYLOR, Mr. ALFRED, case of poisoning by corrosive sublimate -	297
profuse salivation - - - -	298
poisoning by sugar of lead - - - -	299
on the normal existence of lead in the body - -	ib.
Tendo Achillis, rules for the section of - - - -	102
Tetanus, successful cases - - - -	171
fatal cases in which ether was used - - - -	339
successful cases in which ether was used - - - -	340
THOMAS, Mr., case of rupture of the uterus, with recovery - -	256
THOMSON, Dr. ALLEN, on malformation of the ear - - - -	237
THOMPSON, Dr. T., on the treatment of chronic bronchitis - -	38
Tibia, erectile tumour of the head of the - - - -	93
Tobacco, injurious effects of - - - -	76
Tongue, semeiology of - - - -	44
TORBOCK, Dr., on the treatment of uterine hemorrhage by stimulating uterine injections - - - -	253
TOVEY, Mr., case of suppression of urine - - - -	184
TOYNBEE, Mr., on morbus Brightii - - - -	ib.
disease of the ear - - - -	231
Trephining, neuralgia cured by - - - -	94
Triceps cruralis, diagnosis of rupture of the tendon of - -	79
rupture - - - -	200
Tumour, uterine, history of - - - -	242
fibrous, history of - - - -	ib.
treatment of - - - -	141
Tumour, ovarian - - - -	244
various, analyses of - - - -	291
TURNBULL, Dr., notice of work by on physical diagnosis - -	172
Typhoid fever, analysis of the blood in - - - -	273
Ulcers, obstinate, new mode of treating - - - -	199
creosote in - - - -	ib.
Umbilical cord, absence of - - - -	257
Urethra, extraction of a needle from by a new process - - -	106
Urethro-plasty in perineal fistula - - - -	217
Urinary calculi, remarkable cases of - - - -	209
Urine, state of in ascites - - - -	50
suppression of, case - - - -	184
colouring matter of - - - -	282
determination of urea in - - - -	283
uric acid in - - - -	ib.
creatine constituent of - - - -	ib.
estimation of ammonia in - - - -	ib.
variation in the phosphates of - - - -	284
recognition of alkalinity of from various causes - - -	285
quantity of sulphur and phosphorus excreted with the - -	ib.
peculiar condition of albumen in - - - -	ib.
sugar in, fallacy of Moore's test - - - -	286
effects of medicines on - - - -	ib.
in disease, list of memoirs on - - - -	287
Urticaria, pathology of - - - -	67
Uterine injections, in leucorrhœa - - - -	132
dangers of - - - -	242
in uterine hemorrhage - - - -	253
Uterus, on some congestive, inflammatory, and ulcerative affections of excision of the neck for carcinoma - - - -	133
	136



	PAGE
Uterus, inversion of - - - - -	137
ulceration of the lining membrane of - - - - -	242
fibrous tumour of - - - - -	ib.
cauliflower excrescence - - - - -	244
prolapse of complicated with pregnancy - - - - -	252
rupture of, with recovery, case - - - - -	256
Varices, cure of by electro-magnetism - - - - -	110
Varicocele and hernia, diagnosis of - - - - -	78
Variola, vaccinia, &c. - - - - -	67
Vertebræ, upper cervical, fracture of - - - - -	83
WARE, Dr., on the natural history of delirium tremens - - - - -	28
Warts, syphilitic - - - - -	59
WATMOUGH, Dr., on a combination of senna and matico in melæna - - - - -	50
WELLS, Mr., claims to the discovery of ether inhalation - - - - -	330
WHARRIE, Dr., cases of violent deaths without external marks - - - - -	322
WILMOT, Dr., cure of aneurism by anastomosis and by the actual cautery - - - - -	115
WILLSHIRE, W., on the diagnosis of scrofula - - - - -	51
WILSON, ERASMUS, notice of a work by, on diseases of the skin - - - - -	184
Wounds, treatment of by irrigation - - - - -	198
WRIGHT, Dr., on the varieties of headache - - - - -	33
on the semeiology of the tongue - - - - -	44
ZIMMERMANN, researches on the serum of the blood - - - - -	267
Zinc, acetate of, an antidote to poisoning by the alkaline sulphurets - - - - -	294
vessels, effects of oil on - - - - -	300

HALF-YEARLY ABSTRACT  
OF THE  
MEDICAL SCIENCES.  
JULY — DECEMBER,  
1847.

# LIST OF BRITISH AND FOREIGN PERIODICALS REFERRED TO IN THE "HALF-YEARLY ABSTRACT."

## BRITISH.

*British and Foreign Medical Review.*  
*Medico-Chirurgical Review.*  
 " *Transactions.*  
*Transactions of the Provincial Medical Association.*  
*Edinburgh Medical and Surgical Journal.*  
*London and Edinburgh Monthly Journal.*  
*Dublin Quarterly Journal of the Medical Sciences.*  
*Lancet.*  
*Medical Gazette.*  
*Provincial Medical Journal.*  
*Medical Times.*  
*Dublin Medical Press.*  
*Bell's Pharmaceutical Journal.*  
*Guy's Hospital Reports.*  
*Chemical Gazette.*  
*Chemist.*

## AMERICAN.

*American Journal of the Medical Sciences.*  
 " *of Science and Art.*  
*Philadelphia Medical Examiner.*  
*New York Journal of Medicine.*  
*Boston Medical and Surgical Journal.*  
*Southern Medical and Surgical Journal.*  
*British American Journal of Medical Science.*

## FRENCH.

*Annales de Chirurgie.*  
 " *d'Hygiène.*  
 " *de Chimie et de Pharmacie.*  
 " *des Maladies de la Peau.*  
*Archives Générales de Médecine.*  
*Bulletin des Académies.*  
*Encyclographie Médicale.*  
 " *des Sciences Médicales.*  
*Journal des Connaissances Médico-Chirurgicales.*  
*Gazette des Hôpitaux.*  
 " *Médicale.*  
*Journal de Chirurgie de M. Malgaigne.*  
*Revue Médicale.*  
*Journal de Chimie Médicale.*  
*Journal de Chimie et de Pharmacie.*

## GERMAN.

*Schmidt's Jahrbücher.*  
*Zeitschrift für de Gesammte Medicin.*  
*Muller's Archiv für Anatomie, &c.*  
*Liebig's Annalen der Chemie und Pharmacie.*  
*Canstatt's Jahresbericht.*  
*Buchner's Repertorium.*  
*Haller's Archives für Physiolog. und Patholog. Chemie.*  
*Casper's Wochenschrift.*  
*Poggendorfs Annalen.*

N. B.—Every periodical here specified is consulted *directly* by the Editor and his coadjutors.



THE  
HALF-YEARLY ABSTRACT  
OF THE  
MEDICAL SCIENCES:

BEING

A PRACTICAL AND ANALYTICAL DIGEST OF THE CONTENTS OF THE PRINCIPAL  
BRITISH AND CONTINENTAL MEDICAL WORKS PUBLISHED  
IN THE PRECEDING SIX MONTHS.

TOGETHER WITH

A SERIES OF CRITICAL REPORTS ON THE PROGRESS OF MEDICINE AND THE  
COLLATERAL SCIENCES DURING THE SAME PERIOD.

EDITED BY

W. H. RANKING, M.D., CANTAB.,

LATE PHYSICIAN TO THE SUFFOLK GENERAL HOSPITAL.

Apparatu nobis opus est, et rebus exquisitis undique et collectis, arcessitis, comportatis.—CICERO.

VOL. VI.

JULY—DECEMBER, 1847.

PHILADELPHIA:  
LINDSAY AND BLAKISTON.  
1848.

### NOTICE TO CORRESPONDENTS.

---

*The Editor requests that all communications be forwarded (free) either to MR. CHURCHILL, Princes street, Soho, London, or to himself, addressed DR. RANKING, Norwich.*

*The Editor is again compelled to remind his American correspondents that no parcels are taken in unless the entire charge is paid upon them.*

*Numerous Journals and other communications from America, with a charge varying from 10s. 6d. upwards, have been refused.*

*Many inquiries having been made, chiefly from Subscribers in remote country places, as to the best way of obtaining the "Half-yearly Abstract" regularly, it is suggested that an order for the supply of each Volume as it comes out, should be given to a local Bookseller, or to the Subscriber's London Druggist.*

# CONTENTS.

## PART I.—PRACTICAL MEDICINE, PATHOLOGY, AND THERAPEUTICS.

### SECT. I.—*Zymotic Diseases.*

ART.	PAGE
1. On the Treatment of Fever by Cold Water. By Dr. Gill . . . . .	17
2. The Causes, Prevention, and Treatment of Typhus Fever. By Dr. Pidduck . . . . .	22
3. On the Use of Nitrate of Silver in the Cure of Erysipelas. By Mr. Higginbottom . . . . .	23
4. Treatment of Erysipelas by Linear Blisters . . . . .	26
5. Diagnosis between Scurvy and Purpura . . . . .	ib.
6. On Dropsy after Scarlet Fever. By Merbach . . . . .	27
7. Treatment of Dropsy after Scarlet Fever. By Dr. Edward Charlton . . . . .	28

### SECT. II.—*Diseases of the Nervous System.*

8. Medical Treatment of Insanity . . . . .	29
9. Remarks on Delirium Tremens. By Dr. Soltau . . . . .	31
10. Treatment of Epilepsy . . . . .	34
11. On Coma, or Temporary Loss of Consciousness, from Worms, &c. By Mr. Corfe . . . . .	35
12. Diagnosis in Cerebral Disease . . . . .	36
13. On Spinal Apoplexy. By Dr. Peddie . . . . .	37
14. Treatment of Sciatica. By Dr. Seymour . . . . .	38
15. Intercostal Neuralgia and Neuritis. By M. Beau . . . . .	39

### SECT. III.—*Diseases of the Respiratory System.*

16. Account of a physical Sign of Pneumonia of the Apex of the Lungs. By Dr. Boling (U. S.) . . . . .	42
17. Treatment of Pneumonia. By M. Tessier . . . . .	43
18. On the Powers of Strychnine in Chronic Bronchitis. By Dr. Clarke (U. S.) . . . . .	45
19. On Galvanism in Aphonia . . . . .	ib.
20. Treatment of Coryza . . . . .	46

### SECT. IV.—*Diseases of the Circulatory System.*

21. Case of Double Aorta with Aneurismal Dilatation of one Division . . . . .	46
22. On Pericarditis. By Dr. Bartolomè . . . . .	48
23. Treatment of Pericarditis. By Dr. Shearman . . . . .	50
24. On the Causes of Cyanosis. By Dr. Chevers . . . . .	51
25. Sulphate of Quinine in Aneurism of the Aorta . . . . .	56
26. On Abdominal Pulsation. By Mr. Crisp . . . . .	ib.

### SECT. V.—*Diseases of the Chylopoietic System.*

27. Symptoms and Treatment of Chronic Ulcer of the Stomach. By Dr. Budd . . . . .	57
28. Treatment of the Gastric Irritation of Phthisis . . . . .	59
29. Abscess of the Liver treated by Puncture. By Mr. Clay . . . . .	ib.
30. The most common Causes of Intestinal Obstruction. By Mr. Crisp . . . . .	60
31. On the Internal Use of the Nitrate of Silver in Obstinate Diarrhœa. By Mr. Aikin . . . . .	ib.
32. Dr. Heberden's Treatment of Dysentery . . . . .	62
33. Treatment of Obstinate Hiccuph . . . . .	ib.

### SECT. VI.—*Diseases of Uncertain or Variable Seat.*

34. On the Treatment of Diabetes. By Dr. Rees . . . . .	62
35. On the Treatment of Diabetes. By Mr. Elam . . . . .	63



ART.	PAGE
36. Clinical Lecture on Gout. By Dr. Todd . . . . .	64
37. Treatment of Acute Rheumatism . . . . .	65
38. On the Alkaline Treatment of Rheumatism . . . . .	ib.
39. Morbid Anatomy of Chronic and Acute Rheumatism. By Professor Hasse . . . . .	ib.

#### SECT. VII.—*Diseases of the Skin, &c.*

40. Treatment of Lupus . . . . .	66
41. Observations on Itch. By M. Devergie . . . . .	67
42. Clinical Observations on the Treatment of Squamous Diseases of the Skin. By M. Devergie . . . . .	68

#### SECT. VIII.—*Therapeutics.*

43. On a New Criterion for Blood-letting. By M. Polli . . . . .	69
44. On the Rubefacient Effects of Potassa Fusa. By Dr. Barnes . . . . .	72
45. On the Therapeutic Powers of Electricity and Galvanism. By Dr. Golding Bird . . . . .	73
46. The Electric Moxa. By Dr. Golding Bird . . . . .	74
47. Substitute for Epsom Salts . . . . .	75
48. Di-arsenite of Quinine . . . . .	ib.

### PART II.—SURGERY.

#### SECT. I.—*Symptomatology and Diagnosis of Surgical Diseases.*

49. Diagnosis of a Mercurial Sore. By Dr. Porter . . . . .	76
50. Signs of Fracture of the Cervix Femoris . . . . .	ib.
51. Mr. Kun's New Instrument for the Diagnosis of Tumours . . . . .	77
52. Separation of the Sacro-iliac Symphysis. By M. Kluyskens . . . . .	ib.

#### SECT. II.—*Nature and Causes of Surgical Diseases.*

53. Fatal Results from Fracture of the Nasal Bones. By Mr. Rogers . . . . .	79
54. Dislocation of the Sixth Cervical Vertebra on the Seventh . . . . .	80
55. On the Influence of Gravity and the Decumbent Position on the Circulation in Surgical Diseases. By M. Gerdy . . . . .	ib.
56. On Punctiform Corneitis. By M. Desmarres . . . . .	84
57. Unusual Injury of the Knee. By Mr. Edwards . . . . .	86
58. Subluxation of the Humerus Forwards and Inwards. By M. Hallett . . . . .	ib.
59. On the Nature and Causes of Simple Lateral Curvature of the Spine. By Mr. Lonsdale . . . . .	89
60. Caries of the Superior Cervical Vertebra with Destruction of the Body of the Axis . . . . .	92
61. On Vertical or De Champ Dislocation of the Patella. By M. Payen . . . . .	93

#### SECT. III.—*Treatment of Surgical Diseases.*

62. Cases Illustrating the Use of Ether in Surgery. By Dr. Snow . . . . .	96
63. Reduction of a Dislocation of the Femur under the Influence of Ether. By Mr. Caunt . . . . .	97
64. Dislocation of the Humerus of five weeks' standing Reduced by means of Jarvis's Adjuster . . . . .	98
65. Removal of the Superior Maxilla for a Tumour of the Antrum—Return of the Disease—Second Operation. By Dr. Sims . . . . .	99
66. Treatment of Partial Deafness . . . . .	102
67. Syphilis of the Bones. By Dr. Porter . . . . .	103
68. Galvanism for the Decomposition of Urinary Calculi. By Mr. Donovan . . . . .	107
69. Treatment of Abscesses by Seton. By Dr. Darby . . . . .	108
70. Amputation of the Tibio-tarsal Articulation, by Syme's Method. By Dr. Bellingham . . . . .	109
71. Dislocation of the Femur on the Dorsum Ilii reduced by Kluge's Method . . . . .	110
72. Amputation of the First Carpo-metacarpal Articulation. By Mr. Power . . . . .	111
73. Treatment of Lateral Curvature of the Spine. By Mr. Lonsdale . . . . .	112

ART.	PAGE
74. Treatment of Nasal Calculus. By Mr. Cook . . . . .	115
75. Description of a New Apparatus for the Treatment of Fracture of the Thigh. By Mr. Bottomley . . . . .	116
76. On the Employment of Cold Water in Cases of Severe Burns. By Dr. Küsten . . . . .	117
77. Removal of the Lachrymal Gland. By Mr. Pemberton . . . . .	118
78. Strangulated Hernia treated successfully by Opium. By Mr. Lane . . . . .	119
79. On Urinary Fistulæ and their Treatment. By Mr. Colles . . . . .	120
80. Removal of a Pebble from the Trachea by Tracheotomy . . . . .	124

#### SECT. IV.—*Rare Surgical Cases.*

81. Case of Monomania caused by Depression in the Skull—Cured by the Operation of Trephining. By Dr. C. L. Robertson . . . . .	125
82. Chronic Suppuration of the Joints, &c., after Scarlatina. By Mr. Bernard . . . . .	126

### PART III.—MIDWIFERY AND DISEASES OF WOMEN AND CHILDREN.

#### SECT. I.—*Midwifery and Diseases of Women.*

83. On Inflammation and Ulceration of the Os and Cervix Uteri in the Virgin Female, &c. By Dr. H. Bennett . . . . .	128
84. On Inflammation and Ulceration of the Cervix Uteri in Females advanced in Life. By Dr. H. Bennett . . . . .	131
85. On Ulceration of the Os and Cervix Uteri as an Occasional Cause of Dysmenorrhœa. By Dr. Edwards . . . . .	133
86. Treatment of Inflammatory Induration of the Cervix Uteri by deep Cauterization with Potassa Fusa. By Dr. Simpson . . . . .	137
87. Singular Case of Delivery at Full Term without Operative Aid, through a Pelvis diminished to 1 inch transverse, 2½ inches long diameter. By Dr. Simpson . . . . .	138
88. Abdominal Tumour mistaken for Pregnancy. By Mr. Challice . . . . .	140
89. Cases of Laceration of the Perineum, with their Treatment. By Dr. Mettauer (U. S.) . . . . .	142
90. Galvanism in Atony of the Uterus during Labour. By Mr. Cleveland . . . . .	144
91. On Funis Presentations. By Mr. Stephens . . . . .	145
92. Influence of the Periods of the Day on Births . . . . .	146
93. On Inversion of the Uterus. By Mr. Crosse . . . . .	ib.
94. Inversion of the Uterus successfully treated. By Mr. M'Coy . . . . .	149

#### SECT. II.—*Diseases of Children.*

95. On Simple Acute Inflammation of the Brain in Infants. By M. Rilliet . . . . .	149
96. Symptoms of Cerebral Disease in Infancy. By Dr. West . . . . .	158
97. Excerpta from Lectures on the Diseases of Children. By Dr. Wilshire . . . . .	160
98. Treatment of Chronic Hydrocephalus. By Dr. West . . . . .	164
99. Remarks on the Diagnosis and Treatment of True or Inflammatory Croup. By Dr. Meigs . . . . .	ib.
100. On the Pneumonia of Childhood. By Dr. Friedleben . . . . .	166
101. On some Uncommon Forms of Abscess in Children. By Dr. Rees . . . . .	167

#### REPORTS.

Report on the Progress of Practical Medicine, Pathology, and Therapeutics. By the Editor . . . . .	171
Report on the Progress of Surgery. By H. Ancell, Esq., Lecturer on Medical Jurisprudence, &c. . . . .	197

ART.	PAGE
Report on the Progress of Midwifery and Diseases of Women and Children. By the Editor . . . . .	243
Report on the Progress of Anatomy and Physiology . . . . .	275
Report on the Progress of Materia Medica. By George Edward Day, M. A., L. M. Cantab. . . . .	296
Report on the Progress of Public Health. By William A. Guy, M. D. Cantab. . . . .	310
APPENDIX.—On the Anæsthetic Effects of the Inhalation of Chloroform . . . . .	346

Bibliographical Record . . . . .	349
Books received . . . . .	354
Index . . . . .	355



# ABSTRACT OF THE MEDICAL SCIENCES,

&c. &c.

## PART I.

### PRACTICAL MEDICINE, PATHOLOGY AND THERAPEUTICS.

#### SECTION I.—ZYMOTIC DISEASES.

ART. 1.—*On the Treatment of Fever by Cold Water.*

By WILLIAM GILL, M. D., Physician to the Nottingham Dispensary, &c.

(*Prov. Med. and Surg. Journal*, Sept. 22.)

[In our last volume, p. 3, the reader will find a communication by Mr. Stallard, of Leicester, upon the efficacy of the external application of cold water as a refrigerant and sudorific in fever; we continue the subject by the following abstract of a paper which was read at the last meeting of the Provincial Medical and Surgical Association.]

Before entering more immediately on the object of this paper, the author describes concisely the general features of the prevalent fever. In most cases the *immediate* cause of the attack was traceable to sleeping in crowded lodging houses, the usual abode of fever in large cities; the proximate causes, doubtless, were over-fatigue, and insufficient and unwholesome food. The term "hunger pestilence" has been aptly applied to the disease. A true typhoid gastro-enterite was present in many of the patients, closely resembling what so frequently is observed in the Parisian hospitals. Whether the essentiality of the fever existed in the condition of the muco-alimentary membrane or not, it was not the author's intention to discuss. This, however, he remarked, that *so soon* as the signs of gastro-alimentary irritation were subdued, the signs of general fever subsided. Some two or three cases, which he read, corroborate this observation. In the generality of patients under his care, not only was the gastro-alimentary membrane affected, but also the muco-pulmonary, as evidenced by cough, shortness of respiration, and frequently universal sonorous râles, affecting the whole of the chest. In most of the Irish sick, the skin was spotted with petechiæ, of different sizes and colours, chiefly developed on the abdomen and chest. This was not remarked amongst the English cases. There was no discharge of blood from the inner membranes. Oedema of the lower extremities occurring early in the disease was generally a fatal symptom, though we had two cases of recovery in boys, who were universally anasarcous from the commencement. The disturbance of the sensorium was marked by low muttering delirium, sometimes wandering about the bedroom, constant picking at the bedclothes, and subsultus tendinum. Some were affected with a heavy, comatose, and stupid state, from which they were with difficulty aroused, and when aroused, with difficulty were made to understand questions; they relapsed immediately into the same lethargic condition when left to themselves. This comatose condition often continued till convalescence was established, and in some even later. It seemed a perfect prostration of all mental

energy, and was only relieved as the bodily powers regained their tone. In no one case did active delirium occur. The secretions from the bowels were thin, frequent, black, and offensive, and often attended with severe griping, but no bloody discharges. The function of the bladder in one or two individuals was suspended, and it was necessary twice daily to use the catheter. The usual period of the termination of the fever seemed to be from the eighteenth to the twenty-first day, at which time the patients were left in a state of the greatest prostration. When the case terminated fatally, an unrousable, unconscious coma closed the scene. The usual symptoms of fever were generally present,—as the hot dry skin, black tongue, urgent thirst, pulse varying from 90 to 130, insomnia, and pains in head, back, and limbs, &c. After this brief description of the general features of the disease, he proceeds to the treatment.

He remarks that he is well aware that a great prejudice exists in the profession against the treatment to be advocated, partly because it is opposed to preconceived opinions, and chiefly from the unprofessional manner in which it has been ushered into notice. Feeling certain, however, that he was addressing a body of gentlemen willing to receive *truth* for the *sake of itself*, he, with perfect confidence, detailed a treatment of fever as yet untaught in the schools, and generally unrecognized by the profession.

Dr. Currie, of Liverpool, was the first scientific English physician who enlisted cold water as an external remedial agent in the treatment of fevers. Successful as the practice was under his direction, it has been little followed in later times. It is only within the last few years that the prejudice which existed against the internal and external use of water has begun to subside. "Perhaps," observes the author, "the prominence of the sanitary questions, and the many evils proved to arise from the want of a due supply of pure water, has had much to do in removing this groundless prejudice, and may have produced an undue reaction in its favour, causing it to be considered *not only* as necessary to a healthy condition, but as a *curative agent* of universal efficacy. Hence, perhaps, the public mind has been somewhat prepared to receive the hydropathic theory with much more favour than its intrinsic merits demand. An universal remedy will ever find many advocates, and, in a numerous profession like ours, there are ever men to be found who, from selfish motives, will pander to this diseased taste of the public mind. We, as an association, must ever protest against such exclusive theories as prevail in our days, being in our opinion unscientific, opposed to experience, and calculated to lead to incorrect views respecting the power of many known and valued medicinal agents. In making this protest against any exclusive theory for the cure of diseases, we must not rush into the opposite extreme, and, from disbelief of their universal efficacy, deny their particular efficacy, when the touchstone of experience speaks to the contrary."

The plan the author has adopted for the cure of fever, has been a modification of Dr. Currie's. Instead of pouring buckets of cold water over the body, he has it enveloped in a wetted sheet, an instrument more effective than Currie's in reducing the temperature of the body, and producing a warm and comfortable perspiration, which did not uniformly follow his plan. The fear of evil consequences from this treatment is groundless. He gives no opinion as to its utility, except in cases of fever. Here, however, he states that he can speak with confidence. When the skin is burning hot, and the mouth and tongue parched, the application of a sheet wrung out of cold water, and applied *closely* to the whole surface of the body, and evaporation prevented by the application of three or four blankets placed over it, produces a most grateful feeling of refreshment, which is soon followed by a more or less warm perspiration. In young people, this perspiration breaks out in from five to ten minutes after its application; in middle-aged people the period is longer. Many uncomfortable sensations are soon relieved by its use; such as the muscular pains in the back, thighs and legs, and the sense of aching and weariness; the thirst often becomes less, and even the dry tongue sympathises with the relaxing influence induced on the cutaneous surface. He has seen the low moaning delirium subside whilst under its use; and some patients, who have not slept before, doze, especially if the hair has previously been cut short, and a flannel nightcap, wetted with vinegar and water, been applied to the head.

The simple plan he has followed has been this:—On a flock-bed he has placed

from three to five blankets; superimposed over these, a sheet wrung out of cold water, on which the patient, stripped, is placed, with legs outstretched, and arms to the side: the sheet is then drawn tightly around, up to the neck, and inclosing the feet: first, one blanket, then another, and so on to the whole number, are tightly drawn over the sheet, so as to have the *whole body well and closely packed*. In this state, the patient lies from a quarter of an hour to one or two hours, according to the object in view, and the effect produced. Some get tired at the end of half an hour, some can continue for one or two hours, and feel very comfortable. As soon as a gentle perspiration commences, a wineglassful of water is given frequently. At the commencement of this treatment, in a case of fever, he has generally ordered its use for one hour; after that time the wet things are removed, and the sick person is placed in bed, well wrapped in three blankets, and allowed to perspire for three hours; afterwards, the blankets are to be carefully removed, one at a time, so as to allow the perspiration to subside gradually, and the patient is then placed in bed, between the sheets.

During the whole of this period, small quantities of water should be given. In the summer, during this process, a free ventilation may be allowed in the chamber, in winter it is necessary to have a good fire, and to have one blanket well warmed, to apply around the body, so soon as removed from the wet sheet.

Several cases of incipient fever have lost all traces of disease after the first application. If the fever be not reduced, the next day the same plan must be repeated, keeping the patient in the wetted sheet from half an hour to one hour, according to the intensity of the symptoms, and in the blankets from one to two hours. This may be repeated every day till indications of a *cool* skin arise, then it must be immediately discontinued.

During some period of this treatment, the temperature of the atmosphere being very high, (75° to 78° in shade,) the author has not found it advisable to keep the patient as long as two hours sweating in the blankets: from half an hour to one hour was sufficient. A longer period caused the pulse to be accelerated instead of lowered, which latter is the usual effect of the treatment. In very hot weather, when a free perspiration has been induced at the commencement of the fever, he has adopted the following plan. To wrap the sick person for half an hour in the wet sheet, covered lightly with one blanket: to be then washed all over with a towel wetted with tepid water, then rubbed dry, and placed in bed between the sheets. He has not found it necessary to make use of this treatment more than five times to the same individual; generally, after the third or fourth application, the skin becomes cooler, and the other signs of fever gradually subside. When the skin becomes cool, and the tongue less dry, he has instantly discontinued all water remedies, and given bark, wine and broths, and it was surprising how soon convalescence and strength became established. During the whole course of the fever, milk and water, or weak broths, were allowed *ad libitum*. In one person, twice in the course of the same day, owing to the intensity of the fever, it was found necessary to repeat the wet sheet, using it the second time for only half the period of the first; a comfortable night ensued.

Without doubt, this is a most effective mode of *quickly* reducing the temperature of the body; an equilibrium is soon established between the cold of the water and the heat of the body, and the patient becomes bathed in a natural vapour-bath, as may be felt by placing the hand under the bedclothes. Where the fever runs high, and the delirium is violent, the wet sheet may be safely applied for short periods (two minutes), several times in the course of the day. This will be found a more effectual mode of reducing the cerebral excitement, than any other means with which we are acquainted. This refrigerating plan, used for ten minutes, during an evening exacerbation, will often produce a few hours' refreshing sleep.

The author confesses that he had, at first, great doubts as to the *safety* of this treatment, where the mucous membranes of the bronchi and gastro-alimentary passages were complicated. Very soon his fears on this head were dissipated by the convincing evidence of experience; in fact, *these* proved the cases in which the decided benefit of the treatment was most marked. The quick and embarrassed respiration, dry cough, and sonorous râles, subsided quickly after one or two applications of the wet sheet; the cough became looser, the râles moister, and expectoration was established.



The same happy change also occurred where the gastro-alimentary membranes were disordered. Generally, the first wet sheet puts a stop to the diarrhœa, and soon afterwards, pain and swelling disappeared. A confined state of the bowels was frequently the effect of the wet sheet, and it was found necessary, in several of the patients, to resort to small doses of castor oil. In three or four cases, the symptoms of gastric and abdominal irritation or inflammation were so violent as to have justified the employment of leeches, calomel, and opium; and, indeed, we know that depletion by leeches is the usual treatment followed in the Parisian hospitals, and yet by the simple means mentioned, in three days every bad symptom had vanished. A great saving is made to the patient's strength, when we can dispense with the abstraction of blood.

As the author is anxious to make this paper altogether practical, he does not enter into any theory respecting the *modus operandi* of the wet sheet.

The following selection of cases was read:

CASE I. Michael Kane, aged 18, Irish vagrant, of vigorous constitution. He has been in the Union Hospital five days, under the care of Mr. Stiff, and taken salines.

June 28th. The following is his present condition:—Supination in a lethargic state, and unconscious, unless violently aroused; the face purplish red; eyes bloodshot and pupil dilated; constantly picks at the bedclothes; subsultus tendinum; low muttering delirium; the skin furnace-hot; tongue dry, shrivelled, black, and covered with sordes; diarrhœa; general tympanitis of abdomen, without much expression of pain when pressed, unless aroused, and then his face indicates the existence of pain; the urine and stools are not passed involuntarily; the abdomen and skin generally covered with dark-coloured petechiæ; the respiration hurried, forty-four in the minute, and the stethoscope reveals universal bronchitic râles in the chest; pulse 130, weak and hurried. The treatment ordered was the application of the wetted sheet for one hour, blanket for two hours; the head to be shaved, and a flannel night-cap, wetted with vinegar and water, to be constantly applied. To have milk and water *ad libitum*.

There evidently were clear signs of head, chest, and abdomen complication. The bloodshot eye and purple countenance, accompanying a nearly unconscious state, indicated a congestive condition of the brain. The stethoscope revealed a similar condition in the lungs, and the universal swelling of the abdomen, attended by diarrhœa, and by pain when the patient was partly sensible, added no little to cause a most unfavourable prognosis to be formed.

June 29th. The aspect is better; has passed a better night; the picking at the bedclothes and the low muttering delirium are quite subsided; the skin is cooler and rather inclined to moisture; the purging no longer continues, and there is less tympanitis; breathing and dry cough less troublesome; respiration not so frequent when lying quiet, but the slightest movement causes it to be accelerated; the râles moister; the man more intelligent when aroused, but still instantly falls into a doze when left to himself; the tongue not so black or dry; the pulse come down to 100, regular and soft. He sweated much both in the sheet and blankets. To repeat the wet sheet and blankets as before.

30th. Continues better in all respects. No further application of the wet sheet.

July 1st. The man is convalescent; skin cool and moist; tongue has nearly lost all marks of dryness and blackness; urine free and paler coloured; bowels open once daily; intelligence nearly restored; pulse 90; the chest and abdominal complications rapidly subsiding; the patient asks for nourishing diet. To have the bark, mutton broth, and bread and milk.

July 4th. To have meat daily.

5th. Is able to walk in the room.

6th. Is down stairs in the yard, and well.

CASE II. Martin Glynn, Irish vagrant, aged 13, has been ill three days.

June 9th. There is intense heat of skin, and flushing of the face, with pains in the head, bones, abdomen, back, and legs; great thirst; tongue deep red, and covered in the centre with a cream-coloured fur; great pain in epigastrium, and a tympanitic condition of the abdomen, with diarrhœa; there exists slight cough, but no râles in the chest: the tongue is tremulous and subsultus tendinum is present; no sleep; pulse 110, rather sharp; urine scanty, and high coloured.

To have the wet sheet for one hour, and blankets for three hours. Milk and water to drink. The abdominal complication was most marked in this case—a *true typhoid gastro-enterite*.

10th. Continues in many respects the same; the diarrhœa, however, has subsided. Was ordered a repetition of the treatment, and the vinegar-and-water lotion to the head.

11th. Says he is better to-day: the skin is cooler, and inclined to moisture; face very little flushed; tongue becoming less dry and red; headache better; no pain in epigastrium or abdomen; bowels confined; urine free and paler; less thirst; pulse 110, but not so sharp. To repeat the wet sheet as before.

12th. Convalescent; slept the whole of the night, and makes no complaint this morning, except of weakness. Face cool; headache gone; tongue clean and moist; urine free; pulse 64, very soft; appetite returning. To have mutton broth and bread and milk.

13th. To have rice pudding and meat.

16th. Is able to walk in the yard, and may be considered well.

CASE III. Thomas Gafen, Irish, aged 14, of healthy habits, ill for three days.

July 8th. Face flushed and anxious; skin very dry and hot; tongue of a vivid red, and in the centre covered with a dirty cream-coloured fur, becoming dry and black in places; great thirst; throbbing pain in the head, epigastrium, and limbs; pulse 120, wiry, and small; considerable tenderness in epigastrium; gurgling in iliac region, accompanied with diarrhœa; the respiration hurried; frequent cough, and universal sonorous râles in the chest; no sleep, urine scanty. Was ordered the wetted sheet for one hour, and blankets for two hours. Hair to be cut short, and the wetted cap applied. Milk and water to drink.

9th. Continues in all respects the same, except that the skin is somewhat cooler.

10th. Wonderfully better; slept much in the night: aspect natural; no heat of face or skin, which is inclined to moisture; tongue moist, and losing its fur; very slight thirst; urine free; bowels open twice since the 10th, and has lost all pains in the head and epigastrium; pulse 76, soft. No further application was ordered.

On the 14th the boy was allowed to sit up, and have meat, and was considered convalescent.

In conclusion, the author inquires whether we may not draw the following conclusion from the facts brought forward:

1. That the judicious use of the wet sheet has a powerful influence in relieving many of the most distressing symptoms of fever.

2. That if applied *very early* in the disease, it may in some cases arrest its further progress.

3. That if used *later* in the disease it has a controlling influence, bringing the fever to a termination much earlier than by any other known treatment.

4. That the ordinary *complications* of fever are no arguments against, but rather for its use.

5. That with this treatment, weak broths and milk and water, *ad libitum*, may be allowed.

6. That the first symptoms of the subsidence of the fever, were a cool and often moist condition of the skin, a diminution of thirst, and an improvement of the tongue. When these changes occur, the treatment must directly be discontinued, and bark and better diet be ordered.

7. That some of the worst cases of typhus fever were convalescent, and walking about on the fifteenth day from the commencement of the attack.

[We may further observe that, at the Newton Branch Meeting of the Provincial Association, reported in the same number of the Journal, Mr. Burrows related the results of his experience of the above mode of treating fever.]

He commences by clearing the *primæ viæ*. If the skin remained hot and dry, the mental faculties dull and cloudy, the limbs painful and weary, he ordered his patients to be stripped and enveloped in a sheet wrung out of cold water, and closely wrapped in thick blankets. This application was continued forty minutes, or more, according to the effect produced. During the interval warm diluents were freely administered, and when a copious perspiration ensued, the wrappings were removed, and the patient covered with the ordinary bedclothes. When the

patient exhibited all the symptoms of "famine fever," viz., cold skin, feeble pulse, &c., he modified the treatment by wringing the sheet out of very hot water, and covering the patient as before, and at the same time gave hot negus and acetate of ammonia. When sweating was induced it was maintained by placing a hot brick wrapped in flannel at the feet. The patients invariably expressed themselves relieved by this treatment, and some continued to convalesce from that period; others had a marked crisis on the eleventh to the fourteenth day. Mr. Burrows states that he feels convinced that, applied during the initiatory stage of fever, the wet sheet, with purgative and diaphoretic medicines, has prevented the further development of febrile action, and removed the first impression made by the poison upon the system.

ART. 2.—*The Cause, Prevention, and Treatment of Typhus Fever.*

By I. PIDDUCK, M. D.

(*Lancet*, Aug. 14.)

*The cause of typhus fever* is the exhalation of a specific poison from the bodies of the sick, by which persons in health become infected with the disease, as in cases of small-pox, measles, scarlet fever, &c.

This poison may be destroyed by a temperature of 212 deg., whether by boiling in water or by hot air; it may also be diluted by washing and ventilation, so as to be rendered inert.

*The prevention of typhus fever* consists—

1. In separating the healthy, particularly the young, from the sick.
2. In removing curtains and carpets from the room, and clothes from the person of the sick.
3. In boiling linen and cotton garments, blankets, and rugs in water, before they are washed, and in baking woollen cloth garments, which cannot be boiled, put into a sack, in an oven.
4. In washing the bodies of the sick, and the floors of rooms, with soap and water, and the walls and ceilings with lime.
5. In lighting fires in fireplaces, and setting open windows and doors.
6. In keeping provisions away from the apartment of the sick.

But as this poison exerts a much more malignant and fatal effect upon persons whose health is impaired by exposure to malarious influence, it is of great importance that putrid effluvia from drains, dunghills, or privies should be carefully obviated.

The drains from houses should be covered in, cesspools and necessaries should be emptied, stagnant ponds should be run off, and every cottage in the country should be provided with a bricked cistern, covered with a wooden flap-lid, for the reception of all solid and liquid manure, which should be emptied and carried out on the land, as soon as it is full.

If these precautions are taken, there is no need for chloride of lime or any other disinfecting agents, which only correct putrid effluvia; they have no power to destroy the poison. They are worse than useless when they lead to a false security, and occasion the neglect of these more efficient means. In like manner, drinking to excess, especially ardent spirits, eating unwholesome food, such as bad potatoes, decaying vegetables, half-rotten fruit, musty or sour meal, unsound meat, stale fish, and drinking stagnant water, should be carefully avoided. Great attention should be paid to personal and domestic cleanliness. The house should be kept dry, warm, and well ventilated.

*The treatment of typhus fever.* This is better left to the medical practitioner in the locality, who is best able to judge as to the remedies most suitable for individual cases.

The following are the principles which guide the practice in the typhus fever of London:

1. To remove all offending matters from the stomach and bowels, an emetic of salt water or ipecacuanha is administered; then a grain or two of calomel, and fifteen grains of rhubarb, followed by castor oil if necessary.

2. After the operation of the emetic and purgative, the patient is washed all over with soap and water, and put into a clean warm bed, with a fire in the room, and the window open.



3. Five grains of the chlorate of potass in a wineglassful of camphor-mixture is ordered every six hours. The chlorate of potass seems to aid the vital energies in expelling the poison, evinced in the improved colour of the skin, and altered state of the secretions.

The diet consists of bread and milk, or gruel, seasoned with salt instead of sugar, light broth, and fresh, well-boiled vegetables; whey, sago-tea, or lime-blossom tea, and oatmeal toast-water.

The body linen and flannel vest are changed daily, and the sheets once a week; the dirty linen, cotton, and flannel are put at once into cold water, and boiled before they are washed.

From this statement, it is evident that the cure of typhus fever can no more be effected by medical treatment than the cure of small-pox, measles, or scarlet fever. The disease, once set in, must run its course. It terminates, naturally, on or about the fifteenth day. The object of medical treatment, therefore, is to avert its fatal tendency: or, in other words, to conduct the patient in safety through its different stages. If the disease do not admit of cure, much may be done toward its prevention. 1. By separating the healthy from the sick. 2. By destroying or diluting the poison. 3. By avoiding all those causes which impair the health, and weaken the powers of resistance.

ART. 3.—*On the Use of the Nitrate of Silver in the Cure of Erysipelas.*

By JOHN HIGGINGBOTTOM, F.R.C.S.E. Nottingham.

(Read before the Prov. Med. and Surg. Association, at the Anniversary Meeting, at Derby, Wednesday, Aug. 4, 1847.)

The author states that he has found that if the nitrate of silver be applied *early*, it subdues local inflammation and irritation, if we employ, at the same time, the most efficient means for regulating the digestive organs.

At an early period of his practice, in slight cases of erysipelas, he used constitutional remedies alone, hoping that the inflammation would have been arrested; but having been so often disappointed, he now uses both local and constitutional remedies simultaneously, and especially the nitrate of silver. Even in mild cases of erysipelas, in which he did not apply the nitrate of silver, he found the disease very long in duration, and observed that the patients had sometimes numerous small abscesses requiring the use of the lancet, which might have been prevented altogether by the early application of the nitrate of silver.

The objections formerly entertained by him to the very early application of the nitrate of silver, were the pain and inconvenience attending the discoloration of the part on which it is applied, which remains for a week or more, but these objections are trifling compared with the continued severity of the disease, if permitted to run its usual course, particularly on the head, in which there is also great danger of inflammation of the membranes of the brain, and of serous effusion. He has found that when the inflammation has been subdued by an early use of the nitrate of silver, the constitutional symptoms were immediately relieved: the constitutional disturbance is directly aggravated by the least increase of local inflammation, and in a few hours, after a decided application of the nitrate of silver, the inflammation is arrested, and gradually subdued, and with it the constitutional symptoms cease.

Even in idiopathic erysipelas, there is no period of the disease when he would not apply the nitrate of silver, and states that he has never in any cases seen metastasis, or any other bad effect from the use of this important remedy.

When it is necessary to apply the nitrate of silver over an extensive surface, as in erysipelas, he has for some years used the concentrated solution in the manner proposed by Mr. John Gooch, Surgeon, R. N., in a paper published in the "*Lancet*" of September 15th. 1832, entitled "*Practical Remarks on Erysipelas as it appeared on board his majesty's ship, Prince Regent.*" The strength of the solution is not given in this paper; he prescribes it in the following manner:

R. Argenti nitratis, scr. iv,  
Acidi nitrici, gtt. vj,  
Aquæ destillatæ, dr. iv.

[The author gives the following rules for its use:] "In erysipelas of the face, when it is spreading on the forehead, or at all on the scalp, the head should be shaved as early as possible, in order that we may trace the extent of the inflammation on the scalp, which often can only be detected by pain, or by an œdema being felt on pressure with the finger. The affected part should be well washed with soap and water to remove any oily substance from the skin, and afterwards with pure water, to wash away any particle of soap remaining. The concentrated solution may be then applied several times on the inflamed part, and for two or three inches beyond the inflamed margin on the healthy skin. It requires to be applied very freely all over the scalp, where it scarcely or never produces vesication.

"In about twelve hours it will be seen if the solution has been well applied. If any inflamed spot be unaffected by it, it must be immediately re-applied to it. Sometimes, even after the most decided application of the nitrate of silver, the inflammation may spread, but it is then generally much less severe, and it is eventually checked by the repeated application of this remedy. I have in some cases of traumatic erysipelas, found the inflammation to spread more severely, and more rapidly than in the idiopathic, but by the free repeated application of the nitrate of silver, it has at length been subdued."

The following cases are selected to illustrate this mode of treatment:

"CASE I. On the 6th of August, 1844, I visited Miss A., 20 years of age, of very delicate constitution, and of a strumous diathesis. She had been exposed to the rain, and had neglected to change her damp clothing. She experienced the common symptoms attending a cold, accompanied by a slight erysipelatous inflammation of the right side of the cheek and nose. The constitutional symptoms were so slight, and the pulse so little accelerated, that I wished to avoid the application of the nitrate of silver, thinking the inflammation might be subdued by other remedies. I directed thirty grains of ipecacuanha as an emetic, and in three hours after its operation two pills containing three grains of chloride of mercury, and eight grains of the compound extract of colocynth, followed by a purgative of salts and senna, repeated every three hours until it operated freely.

"7th. Early the following morning, although the emetic and purgative had operated satisfactorily, she was labouring under a severe attack of fever; the pulse was 140, and the erysipelas had spread considerably on her face and forehead, and slightly on her scalp. I opened a vein in the arm, and bled her in the semi-recumbent position to the amount of twelve ounces, when she became faint. Her head being shaved, the concentrated solution of the nitrate of silver was applied upon and beyond the whole of the inflamed surface, and also around the ears, to prevent them becoming inflamed. I applied it very freely over one-half of the scalp, thinking this might be sufficient, as only a small portion of the forehead was affected. I prescribed two grains of the chloride of mercury, with two of antimonial powder, every six hours.

"There appeared no increase of the inflammation on the 8th, and the pulse 120; the bowels had been well moved.

"9th. She had a restless feverish night, attended with slight delirium, the pulse being 120. There was no increase of erysipelas on the face, but it was spreading on the remaining part of the scalp. I applied the solution of the nitrate of silver over the remaining part of the scalp. Neither of the ears were in the least affected. The solution of the nitrate of silver had apparently formed a barrier, over which the erysipelas did not spread.

"On the 10th the patient was in every respect improving.

"From this time Miss A. recovered without interruption.

"CASE II. I visited Miss B., aged 30 years, on the evening of the 18th of December, 1843. She had been indisposed several weeks. There were considerable fever, a quick pulse, and pain of the head, and she had a patch of erysipelas on the upper part of the nose, and a little across the lower part of the forehead. I prescribed an emetic of ipecacuanha, followed by a dose of chloride of mercury and compound extract of colocynth, and the sulphate of magnesia in infusion of senna.

"On the morning of the 19th, the erysipelas had spread all over the face, and as high as the forehead, close to the scalp, and there was no abatement of the

constitutional symptoms. I bled her, whilst sitting up in bed, until she fainted, and directed the head to be shaved, and I then applied the solution of the nitrate of silver all over the face, and one half of the scalp. In the evening I applied the solution of the nitrate of silver over the remaining part of the scalp; having found that one ear had become inflamed, I applied the solution both upon it and around the other are affected.

"20th. The fever was considerably abated; the pulse was 100. From this day the patient was convalescent.

"CASE III. I visited Miss C., aged 20 years, on the 14th of September, 1844.

"She had a sense of coldness and pain of the limbs the day before; she had then a slight degree of erysipelas on the left side of the nose, cheek, and upper lip. I directed an emetic and pill, with the compound colocynth powder and chloride of mercury, followed by an active dose of infusion of senna and sulphate of magnesia.

"In the evening I found the erysipelas increased and spreading towards the ear; the lower eyelid was considerably swollen, but the erysipelas had not reached the forehead; pulse 100; no pain of the head. I applied the strong solution of the nitrate of silver all over the inflamed surface, and the surrounding healthy skin, for several inches, particularly round the ear. A grain and a half of chloride of mercury, with two grains of antimonial powder, were given every six hours, and a saline effervescing medicine every three hours.

"16th. The application had been effectual, and there was no increase of the erysipelas; the pulse was 80.

"CASE IV. Mr. J. S., aged 30 years, had slight febrile symptoms on the 11th of December, 1843, which arose from exposure to cold. He had taken aperients and saline medicines. Two days afterwards there was a patch of erysipelatous inflammation on the right side of the face, without any considerable increase of fever. The nitrate of silver was well applied on the inflamed part, and on the surrounding skin. There was no further extension of erysipelas.

[The author, in conclusion, thus comments upon the above cases:]

"It will be observed in the two last cases, when the nitrate of silver was promptly applied, before the erysipelas had produced severe constitutional symptoms, that the progress of the disease was instantly arrested, and that the patients speedily recovered. In the case of Miss B., although the erysipelas at first was suffered to proceed, the application of the nitrate of silver to the whole scalp prevented any cerebral affection, and the patient was convalescent in a short time. In the first case related, there were restlessness and delirium fifteen hours after the application of the nitrate of silver, but it was observed that the scalp, where the nitrate of silver had not been applied, was inflamed, and on the decided application of the nitrate of silver on the whole of the scalp, the delirium ceased. From these cases, as well as from my experience of many years, I conclude that the speedy application of the nitrate of silver will arrest the progress of erysipelas, and prevent cerebral mischief. It is also of great practical importance to subdue erysipelatous inflammation in the commencement, for I have observed, when the attacks have been severe, that the patients afterwards become more subject to a recurrence of the disease.

"The great obstacle to the general and free use of the nitrate of silver, even at the present day, appears to arise from the impression on the minds of many surgeons that it is a caustic,—a destructive agent. If they could be divested of that idea, and use it as freely as they would a common blister of cantharides, their fears would soon subside, from repeatedly observing the safety of the application, and also its beneficial effects. In my own practice I have always considered it a safer remedy than cantharides, as it may be applied freely over a surface, even where very active inflammation exists, or where there is an extensive surface denuded of its cuticle. This remedy has also the advantage of not affecting the bladder, or producing strangury.

"The nitrate of silver is not a caustic in any sense of the word. It subdues inflammation, and induces resolution and the healing process. It preserves, and does not destroy, the part to which it is applied. If we compare a caustic, as the hydrate of potassa, with the nitrate of silver, we find that the hydrate of potassa destroys and induces a slough and the ulcerative process; but if we touch a part



with the nitrate of silver, the eschar remains for a time, and then falls off, leaving the subsequent parts healed.

"If an ulcerated surface secreting pus be touched by the nitrate of silver, the succeeding discharge is immediately converted into lymph: it is the property of the hydrate of potassa, on the contrary, to induce not only ulceration but suppuration. In short, the peculiar properties of the nitrate of silver have long been kept unknown to us by the designation of lunar caustic, affording the most striking instance of the influence of a term, or of a classification, upon the human mind. The nitrate of silver and the hydrate of potassa (as indeed all caustics) are as the poles to each other, the first preserves, the second destroys; the first induces cicatrization, the second, ulceration."

**ART. 4.—Treatment of Erysipelas by Linear Blisters.**—Erysipelas is not a severe disease when it is confined to a limited part of the body; it is generally its extension, either superficially or in depth, that produces the danger. Attempts have long been made to counteract this tendency to extension by the nitrate of silver, solutions of sulphate of iron, &c. These methods have for the most part failed. M. Piorry affirms that he has discovered a means of effecting the desired limitation of inflammatory action with great certainty, by applying, at the commencement of the disease, narrow blisters around the entire circumference of the inflamed skin, at a distance of an inch or two from its border. He states, that the erysipelatos blush soon reaches the inflammation arising from the blister, but in more than twenty cases has not gone beyond it.

*Journal de Pharmacie.*

[In a case of erysipelas arising from the irritation of the throwing off a spicula of bone, consequent upon fracture of the tibia, which has recently come under our care, we endeavoured to limit the extension of the inflammation by encircling the thigh with a linear blister, as above recommended; but we feel bound to state that, although perfect vesication was induced, the erysipelatos blush was in no-wise checked in its progress.—Ed.]

**ART. 5.—Diagnosis of Scurvy and Purpura.**—In an elaborate article, which the present prevalence of scurvy has given rise to, the author, Dr. Curran, makes the following distinctions between that disease and purpura:

SCURVY.	PURPURA.
Most frequent after 18 years of age.	Most frequent between 5 and 18 years of age.
Chiefly affects males.	Females.
Gums more or less sore and spongy.	Gums bleed sometimes, are rarely sore, and never spongy.
Ecchymoses more frequent than petechiæ.	Petechiæ-like spots frequent, ecchymoses rarer.
Shades of eruption most various.	At first always dark-coloured.
Lower extremities almost exclusively affected.	All parts nearly equally.
Muscular indurations nearly always.	Never.
Hæmaturia scarcely ever.	Not infrequent.
Bloody stools very rare.	Frequent.
True hæmoptysis never.	Occasionally.
Neuralgic pains and pains in the spots invariable.	Never.
Effusions in joints frequent.	Never.
Contraction of flexor muscles frequent.	Never.
Lasts for months, if not interfered with.	Rarely lasts more than a few days.
Frequently fatal if not checked.	Scarcely ever fatal.
Always in connection with errors in diet.	None such discoverable.
Affects large numbers of individuals at the same time.	Sporadic; epidemics extremely rare.
Speedily cured by lemon-juice and fresh vegetables.	Cured by purgation and turpentine.

*Dublin Quarterly Journal, Aug. 1847.*

ART. 6.—*On Dropsy after Scarlet Fever.* By MERBACH.(*Journ. für Kinderkrank.*, Mai, 1846.)

The subjoined observations on dropsy were made during an epidemic of scarlet fever which prevailed in Dresden between the months of April 1845, and Feb. 1846.

The dropsy generally declared itself from the 14th to the 21st day following the eruption: it was mostly preceded by a chill, but it sometimes appeared without any evident cause, and in the mildest as well as the most severe form of the malady. The subjects of these dropsical effusions were chiefly boys of the scrofulous habit, with pallid complexion and flaxen hair. The conditions of the desquamation appeared to be without influence upon its occurrence.

The œdema was in all cases first perceived in the face, afterwards over the entire body, and more especially the parts of generation. The serous membranes, and particularly the peritoneum, then became involved in the effusion, which in these cavities was muddy, and contained numerous gelatinous flakes. The peritoneum itself, especially the portion covering the intestines, was covered with a greenish exudation, by which the folds of intestines were here and there glued together: it was also thickened and opaque, and in some portions, as in its reflexions upon the under portion of the liver and over the mesentery, was more or less ecchymosed. In these cases the stomach and intestines were considerably distended with gas, and during life there was pain on pressure with occasional vomiting.

Hydrothorax was of less frequent occurrence than ascites, being observed by the author in only four cases out of twenty-three examined by him. In these cases, however, the signs of pleurisy were well marked, the effused fluid being turbid or purulent, and mixed with flocculi of lymph, the pleura itself being lined with a soft false membrane. The hydrothorax was not indicated with any certainty during life by the respiratory disturbance alone, since the dyspnœa in some cases depended upon œdema, with or without partial inflammation of the lungs. The symptom upon which the greatest reliance was placed was the existence of dulness on percussion. Friction-sounds were not observed, but the respiratory murmur was either greatly altered in character by the pulmonary œdema, or extinguished altogether by the progress of the pleuritic effusion. [The author takes no notice of the existence of bronchial respiration, said to be present in pleuritic effusion by Grisolle and others.\* Vide Abstract, Vol. IV. p. 197.]

Genuine pericarditis was not met with by the author in any instance, but in some cases the pericardial fluid was increased to three or four ounces.

The lungs were œdematous in nine cases; when this was the case they appeared turgid, crepitated loudly upon being incised, and gave issue to a large quantity of bloody serum. In some cases there were found in the inferior lobe of the lungs circumscribed patches of inflammatory exudation, a section of which, however, did not exhibit the appearance of true pneumonic induration. The mucous membrane of the trachea and larger bronchial tubes were covered with a thick tenacious mucus, the smaller tubes being filled with the serous effusion above mentioned. The symptoms of this condition during life are stated by the author to be—extreme dyspnœa, amounting in some cases to orthopnœa: cough with pituitous or rusty expectoration, and occasional sense of suffocation; auscultation revealed bronchial râles of various intonations, together with fine crepitation. The respiratory murmur was more or less extinguished. No inflammatory changes were observed in the heart or large vessels, but the ventricles contained large loose coagula: there was no trace of redness from imbibition, either in the lining membrane of the heart or large vessels. The heart's impulse was frequent and feeble, and occasionally irregular.

The functions of the nervous system were, in the milder cases, uninjured: but in the more severe there were torpor, delirium, and convulsions. After death, the cerebral mass was observed to be somewhat softened, and fluid was effused in the lateral ventricles and under the arachnoid. These fatal lesions occurred in only three cases.

Arriving at the chylopoietic system, the author found that, within a few days of

the supervention of the dropsical symptoms, the tongue became covered with slight fur, and the stomach, as well as the intestines, was occasionally seen to contain an abnormal quantity of mucous secretion. The digestion was impaired in every case, and the appetite was diminished or completely abolished; vomiting was also a frequent symptom. The bowels were usually constipated; the kidneys were always considerably diseased; in severe cases they were bloodless throughout, their external surface being so marked by injection as to have a mottled appearance. The cortical substance was anemic, and infiltrated with hard, yellowish spots, having in some parts a granular appearance. In one case the pelvis of the kidney was much dilated. The urine was always albuminous, but in an intensity differing according to the stage. In general the quantity of the albumen was proportionate to the extent and abundance of the dropsical effusion, and was more considerable in the commencement than at a later period of the disease. A diminution therefore of the albumen does not necessarily denote a decrease of the disease; on the contrary, the author has often noticed that the dropsy regularly and gradually declined, while the albumen continued to be deposited copiously. It is to be remarked, however, that children present an anemic appearance as long as the deposit of albumen continues, and they only recover a rosy tint when that symptom has entirely disappeared. It was observed as a general rule, that the presence of albumen in the urine was accompanied by a diminution of the other solid constituents. The urine was acid in the greater number of cases, in a few it was alkaline.

The progress of the dropsy was very variable. In a few cases death took place on the second day, from rapid infiltration of the lungs; but in general it lasted from two to eight weeks, according to the severity of the case. The subsidence of the dropsical symptoms occurred either in conjunction with a copious flow of urine, or by profuse sweating; in one or two cases by diarrhœa.

The mortality of this epidemic was high, being about one in three. The unfavourable occurrences were traceable to effusion on the brain and lungs, or to pneumonia and pleurisy. The treatment pursued consisted in the exhibition of diuretics, purgatives, and warm baths.

#### ART. 7.—*Treatment of Dropsy after Scarlatina.*

By EDWARD CHARLTON, M. D., Newcastle.

Dr. Charlton describes the dropsy which occurs as a sequela of scarlatina as coming on in two different ways. In one its invasion is intense and sudden, the body being distended with fluid in twenty-four hours, with high fever, full pulse, and almost entire suppression of the urinary secretion. In such cases free general blood-letting was found to be the most efficacious remedy; and this could be, in the cases which occurred to Dr. Charlton in the epidemic described in his pamphlet, the more readily adopted, as the intense attacks of dropsy usually supervened upon the mildest forms of the cutaneous affection. In illustration of this mode of treatment he subjoins an extract from a friend as follows: "The treatment depended much on the nature of the case. If the anasarca was great, with much oppression of the breathing, high fever, rapid but firm pulse, I found one good general bleeding to be followed by the most beneficial effects. This was succeeded by the administration of a mixture of nitrate of potass, liq. ammon. acet., and ant. tart. in moderate doses every two hours, with calomel and compound jalap powder at night, and the latter repeated in large doses in the morning."

Dr. Charlton has occasionally had recourse to the treatment recommended by Dr. Golding Bird. The patient was wrapped in flannel, hot baths were given every night, and he took the following mixture every four hours:

R. Vin. ant. potass. tart. ℥ x,  
Jalap. ammon. acet. ʒ iiij,  
Syrup. papaveris, ℥ x (?):

and the following powder every night:

R. Pulv. ipecac. comp. grs. iiiiiss,  
" hyd. c. creta, grs. v. Ft. pulv.

Elaterium and other drastic purgatives were also given with advantage.



In the other form of dropsy, where the swelling comes on gradually, with little fever, Dr. Charlton has recourse to similar treatment, with the exception of venesection, which is omitted. When dangerous head or thoracic symptoms supervened, as was sometimes the case, the free employment of drastic purgatives was found most efficacious. Of these, croton oil and elaterium were preferred. Whether the fluid had accumulated in the pericardium, pleura, peritoneum, or general cellular tissue, elaterium, in doses of 1-12 to 1-6th grain every three or four hours, produced the most rapid amendment. Stimulants exhibited at the same time with the purgatives are in some cases necessary, and have the best effect.

Much benefit is, in some cases, derived from the exhibition of the iodide of potassium during convalescence. In patients who were left anemic and debilitated, with tendency to the scrofulous deposit, the preparations of iron were useful, particularly the citrate and the iodide. Lastly, change of air is always beneficial in restoring the patient.

Dr. Charlton has little faith in diuretics, as they appear to increase the renal congestion; leeches over the region of the kidneys answered better.

*Account of an Epidemic of Scarlatina at Newcastle, 1847.*

## SECT. II.—DISEASES OF THE NERVOUS SYSTEM.

### ART. 8.—*The Medical Treatment of Insanity.*

(*Amer. Journ. of Insanity, and Dublin Med. Press.*)

We are often questioned, by letter and otherwise, as to the medical treatment of the insane. To answer some of these inquiries, we think it best to very briefly state our views on this subject, and, in a very general manner, describe the practice adopted at the New York State Lunatic Asylum. No specific remedy for insanity has as yet been discovered. Different cases require very different treatment, and that which would be serviceable at one period of the complaint, might be injurious at another. According to our experience, recent cases, for the most part, require a mild antiphlogistic course; but regard should be had to the cause of the insanity. If occasioned by a blow, or other direct physical injury of the head, or by some sudden and violent mental commotion while in good health, free depletion by bleeding, and active cathartics, are useful, and often indispensable. But such cases are seldom seen in lunatic hospitals. We have very rarely considered it advisable to have recourse to general bleeding at this institution. Only four of the 622 patients that have been here during the past year, have been bled by us. In three of these cases, the bleeding did not appear to be serviceable, in one we thought it highly beneficial. Occasionally, when there is much cerebral excitement, we have resorted to topical bleeding, but more frequently, even in such cases, we derive benefit from placing the feet in warm water, the application of cold to the head, and the free movement of the bowels by laxatives. Pouring cold water in a small stream from a height of four or five feet, directly upon the head, is generally one of the most certain means of subduing violent maniacal excitement we have ever seen tried. But this should be done in a gentle manner, and under the immediate observation of the physician, and should not be continued but for a short time; we also advise, never to resort to it when the patient's bowels are confined, or when he has just been eating, and his stomach is full. The warm bath is also serviceable in many cases, to calm excitement; but for this purpose it should be long continued, at least half an hour, and cold water should be gently applied to the head at the same time.

In a few recent cases, croton oil has proved very beneficial, and we have thought particularly so in some cases that seemed to be cured by the use of it after other cathartics had been tried. Of all medicines, it is the most easy to administer to a patient that refuses to take any, and we have often used it, and never with any unpleasant result.

Bathing in warm water we think beneficial in most cases. Bathing in cold water, or showering, we seldom resort to; probably we should have recourse to the

latter more frequently, if not from the impossibility of preventing patients from supposing it to be intended as a punishment.

Most of the medicines we administer are liquid, or in powder. In addition to the preparations of the articles of the *Materia Medica*, according to the United States Pharmacopœia, we have a few of which we make use, that are prepared by ourselves. The following we often administer :

R.—Extract of conium, ℥vj,  
 Ferri carb. precip. ℥xij,  
 Molasses, wine, water (warm), qts. ij āā,  
 Ol. gaultheria or ol. sassafras ℥ij, dissolved in alcohol ℥viii.  
 Misce.

Usual dose, half an ounce to an ounce; if a laxative effect is wanted, we add one or two drachms of tinct. aloes and myrrh to each dose.

We sometimes vary the foregoing preparation as regards all the articles, except the conium and iron, adding mucilage, gum arabic, alcohol, &c.

The following preparation we derive benefit from in many nervous, sleepless, and hysterical cases:—

R.—Tinct. lupulini, tinct. hyos. ℥iv āā,  
 Camphor gum, ℥j,  
 Ol. valerian. ℥l xxxij. Misce.

Dose one to two drachms.

The following preparation we find useful in some cases of violent mania, and when, as is often the case, the urinary secretion is deficient:—

R.—Tinct. digitalis, tinct. scillæ, ℥ss. āā,  
 Vin. antimon. tart. spts. nitri dule. ℥j āā, Misce.

Dose thirty to sixty drops.

Blisters, issues, and particularly setons in the neck, we have often tried, but rarely witnessed any benefit from them, unless they sometimes serve to direct the attention of the patient from his imaginary sufferings and delusions, and thus indirectly do some good.

Emetics and cathartics we do not often prescribe now, as we have seldom known them serviceable; we are, however, careful to avoid a constipated state of the bowels, by the use of mild laxatives or special diet.

Opium has always been used at this institution in the treatment of insanity, and often with great success. In some cases it appears to be useless, and in a few injurious, particularly in those in which the skin is hot and dry, and the pulse full and hard. But such cases are rare. I do not, however, think it a remedy that, of itself, very often cures this disease, but it is a valuable adjuvant to others, and secures a beneficial degree of calmness that cannot be obtained without it. In some cases, however, it seems of itself to effect a cure. Of this we can have no doubt, after having seen many patients apparently recover while taking it freely, and immediately relapse on its being withheld, and again recover under its use, and finally, after continuing it for a considerable time, and gradually diminishing the dose, recover and remain well for years without it.

We rarely give very large doses, seldom more than one grain of the sulphate of morphine, or one drachm of laudanum at a time, usually less. We generally prefer a solution of the sulphate of morphine, two grains to an ounce of water, to any other preparation of opium that we have used. We presume the acetate of morphine is equally good. In some cases Dover's powder has a better effect than morphine, and sometimes laudanum better than either.

I am pleased to find the experience of others in the use of opium in insanity has led them to adopt similar views. Pritchard, in the first edition of his work on Insanity, speaks disparagingly of its use; but in a later work he says, "There are few disorders in which so much benefit is derived from this remedy as in cases of insanity."

Many cases, especially those of some months' continuance, require invigorating diet and tonic remedies. The insanity, or rather the causes that produced the insanity, such as grief, anxiety of mind, intemperance, &c., have already debilitated the system, and much caution is necessary not to increase this debility. Hence,

although a patient may exhibit great maniacal excitement, and appear to have great strength, there is usually danger in depleting.

Many of the patients sent to this institution have been injured by too much bleeding and depletion before they were committed to our care. Some, we think, have been rendered incurable by this treatment, and we cannot forbear remarking that, in our opinion, the work of Dr. Rush on the "Diseases of the Mind," in which directions are given to bleed copiously in maniacal excitement has done much harm, and we fear it is still exercising a bad influence, and we hope no future edition will be issued without notes appended to correct the errors into which the distinguished author has fallen for want of the numerous facts which have been furnished since his time, and which enable us to see the errors of our predecessors.

The various preparations of bark, quinine, and other tonic remedies are here used, but no one preparation is so generally prescribed as the combination of cinchona and iron above mentioned, and from none have we seemed to derive more benefit. Ale we often administer with advantage. In many cases of debility and loss of appetite we have found the following preparation quite serviceable:

R	Tinct. cinchona comp.	℥j,	
	Tinct. gentian.	℥ij,	
	Tinct. capsici,	℥ij,	
	Quinine sulph.	℥ss,	
	Acid. sulph.	℥xv.	Misce.

Dose, one drachm in water, or better in ginger-tea.

Insanity is often complicated with other diseases, and these need attention. Nocturnal emissions not unfrequently occur to the injury of the patient. In such cases we have derived more benefit from tincture of muriate of iron in large doses than from any other remedy, and we have tried very many. The insanity of some females seems to be caused and perpetuated by passive menorrhagia. It is apt to occur about the time the uterus is losing its functions, and is difficult of cure. We have sometimes derived much benefit from the use of tincture of muriate of iron, but more frequently from the tincture of cinnamon and tincture of aloes combined, from twenty to thirty drops of each.

It should ever be borne in mind that disease in the insane is very apt to be masked,—that serious disease of the lungs or of some of the abdominal viscera may exist, but without being manifested by the usual symptoms, and may, therefore, be overlooked without careful examination. In other respects not particularized in these remarks, we are not aware that the diseases of the insane require different treatment from those of the sane.

#### ART. 9.—*Remarks on Delirium Tremens.* By Dr. SOLTAU.

(*Medical Gazette*, June, 1847.)

[The author of this communication reports a case of delirium tremens possessing features of considerable interest, and particularly remarkable in the fact that the production of sleep, which is usually salutary, was not followed by any permanent benefit, but on the contrary, that several relapses took place, after sleep of four or five hours' duration had been procured by opiates. Upon this circumstance the author remarks:]

Now it usually happens in delirium tremens, that if we can secure our patient a few hours of sleep, he rapidly gets well; in fact, we consider our end attained when this result has followed our treatment. From the above history, however, it will appear that the reverse was the case, for when we were congratulating ourselves that our patient was recovering, from the circumstance of his having had many hours refreshing sleep, both by day and night, for two consecutive days, then it was that the most marked and obstinate symptoms made their appearance. Instead of being better, he became worse than he had been at all. It is impossible to account for this, as every precaution was taken to keep him from anything which might excite him. It was on awaking from a sleep of two hours' duration that he first evinced the decided symptoms of what are very appropriately termed the "horrors," which were never more vividly depicted on any countenance.



Twice after this he got continuous sleep for five hours, and though for a time he seemed better, yet the improvement was only temporary; for eleven days did the disease hold out against all remedies, and bid defiance to all treatment. Our only encouragement was the indication we received from the pulse that the vital powers of the system were not yet exhausted, and the fact, too, that our patient, during all his illness, never refused his food or medicine. The tremor of the hands was not constant, nor did it manifest itself until a late period. The busy manner, the look of apprehension, the constant reference to, and anxiety about his usual avocations, the peculiar illusions, the acute condition of every sense, were very characteristic throughout the progress of the case.

[The general treatment of the disease is then described in the following words:]

And first, as to the question of the abstraction of blood. None, perhaps, will question that general bleeding is to be deprecated under any circumstances, but as to the local abstraction of blood there may be cases where its use is indicated. Great caution is necessarily required in distinguishing where this remedy may or may not be safely used, and the following rules may somewhat guide us. If the patient under treatment be plethoric and of sanguine temperament, and complains of pain in the head, if there be much injection of the vessels of the conjunctivæ, if the countenance be suffused, and the head hot, and supposing the pulse does not exceed 90, and is of good strength, then a few leeches, or cupping-glasses applied to the temples, or behind the ears, may be productive of good. But under no circumstances are they to be used if the countenance be exsanguine, the pulse greatly accelerated, or if there be much tremor with profuse perspiration, and a determination on the part of the patient to refuse his medicine and food.

Secondly, with regard to opiates. Now, though this class of remedies are our sheet-anchor by which we trust, in cases of delirium tremens, to weather the storm, yet in their administration they require a careful attention to the symptoms and stage of the disease, in order that they may not be productive of mischief. How are they to be given? at what time? and in what quantity? are three important questions in connection with their use. Of the several preparations of opium, none perhaps acts more speedily or more certainly than the *tinctura opii* of our Pharmacopœia; but supposing, after having given it a fair trial for forty-eight hours, our desired end is not attained, we must have recourse to some other preparation. Time, in all these cases, is of great value, for if we are not gaining ground we are losing it fast. The *liq. opii sed.*, or the salts of morphia, if we can depend on the good quality of the latter, may be tried; and this leads us to say a few words on the quantity to be prescribed, and the time of their administration.

Large doses are to be given at the early stage of the disorder, so that if possible sleep may be procured without loss of time; but if, after a fair trial of opiates in their various forms, sleep does not follow, and as it sometimes happens, the system, from want of rest, indicates symptoms of exhaustion, the pulse, for example, becoming 120, the countenance haggard and worn, with increased tremor of the muscular system, and profuse perspiration, then I would suspend them for a time, and for this reason, lest by their continued exhibition, they should be productive of evil instead of good, in suddenly exercising their accumulative power on a system greatly weakened, and thereby unable to rally when depressed by their influence. Death may thus result from the remedy, and not from the disease. That this occasionally happens when opiates are largely given at the latter stages of delirium tremens, I cannot but believe, and having been particularly impressed with this fact in the sudden termination of one or two cases where this practice was adopted, I have thence drawn what I cannot but think is a wholesome caution on this point. In all cases of delirium tremens it becomes a subject of encouragement to us if the patient can be persuaded to take his food, for we are thereby able, to a certain extent, to supply the waste which the exhausting nature of the disorder produces in the economy, and thus sustain its vital powers. Under these circumstances opiates may be continued with safety; but, on the other hand, if we have given them largely, and no benefit has resulted from them, but we perceive that the strength of our patient is rapidly failing, as is often the case in this disease, then it is better, for a time at least, to turn our attention from this to some other remedy, and endeavour, if we can, to restore the failing powers; for it is better that a case

should terminate of itself fatally, than that its end should be hastened, if not actually occasioned, by the remedies that may be administered.

With regard to stimulants, it is usual to select that which the individual has been accustomed to indulge in when in health, but it is very questionable whether their exhibition is indicated in all cases. Supposing the pulse continues firm, and there is no other sign of failing strength, they may be dispensed with altogether, and, in their stead, may be administered some form of tonic, as, for example, *Æij* of compt. tinct. of gentian, in a bitter infusion, every three or four hours, a small quantity of laudanum being added to each dose; at the same time, nourishing diet is to be given, and attention paid to the state of the bowels, which are often confined. To relieve them, warm cathartics may be ordered in small doses, or a stimulating enema.

During the progress of delirium tremens, it often happens that the patient becomes very restless, is anxious to go about his work, imagines that he hears voices summoning him to his post of duty, and cannot be persuaded to remain in bed. Under these circumstances, how is he to be restrained? There are some who see no harm in his being permitted to follow his inclination to a certain extent, and they therefore would not object to his getting up, and walking about his room, thinking that thus sleep may be induced. This, however, does not accord with my views, as, in my opinion, excitement and irritability, both of mind and body, would be thereby increased, rather than allayed. Instead of this, the room should be darkened, and we should first try what we can do by persuasion to keep our patient in bed; but if, in defiance of all our entreaties, he becomes more and more excited and self-willed, meeting any opposition to his wishes with violence, then it becomes a matter of serious moment to know in what way we are to act. Now it is at this particular juncture that the strait-waistcoat is put into requisition, but often, we believe, with most disastrous consequences; for what happens? Why, the feeling of restraint increases the desire to overcome it; and when he becomes conscious that he is conquered, the patient strains every nerve to release himself from his bondage. His anger calls to its aid all his remaining strength, and he makes one last and great effort to shake off his fetters. The less he finds his efforts available, the more excited does he become, and he continues vainly struggling with himself until his strength becomes gradually exhausted, and he sinks worn out. Believing, therefore, that evil, rather than good, follows the use of the strait-waistcoat, we must look for some other remedial means wherewith to calm the excited condition above referred to, and we think that the tepid bath will be productive of the desired result. The patient may be easily induced to try it; and, having remained in the bath about a quarter of an hour or twenty minutes, he will leave it, less excited in his manner, with a desire to remain quiet. The sedative influence of the bath continues to show itself for some time; and, during this period, supposing there be no sleep, a large opiate may be given. With regard to the use of the bath in this disease, we think it may be always tried when opiates have signally failed in producing sleep or in tranquillizing the system, and its sedative influence will more than counterbalance its exhausting effect on the economy.

[In a subsequent communication (*Medical Gazette*, Aug. 6), the author treats of the causes, diagnosis, and prognosis of delirium tremens. In reference to the causes of the disease, he points out the errors which not unfrequently arise from the prevalent habit of looking upon the abuse of alcoholic liquors as the sole cause; and insists, most justly, on the power of any agent which exhausts the nervous system to produce phenomena precisely identical. "Anything," he observes, "which tends to lower the vital powers of the economy, the nervous energy of which has been already exhausted, may be productive of a condition similar to that of delirium tremens; so that though a case presents itself with features closely resembling the latter affection, we are not to conclude that it has no affinity because it has not a common cause of origin."

The diagnosis is thus laid down by him:]

The two diseases with which delirium tremens might be confounded, are inflammation of the brain and mania. An error of judgment as to the former of these would lead to the most disastrous consequences; for it is scarcely possible to mention two diseases which require more opposite treatment than delirium



tremens and phrenitis. In all the cases which I have seen, the symptoms have been so well marked, as to render it almost impossible for a mistake to be made. There has been no fever, no intolerance of light; the pupil has acted freely, and instead of the dull heavy manner so often seen in affections of the brain, there were a quickness and excitability almost characteristic. The delirium too is of a busy kind, connected usually with the patient's ordinary avocations, instead of the incoherent wanderings which attend cerebral inflammation.

[As an additional means of diagnosis, the reader is referred to Art. 6, of our last Volume, where he will find that the relative proportion of the phosphates in the urine is made a ground of distinction between the two diseases.]

The diagnosis between delirium tremens and mania is not always easy to make out, nor do I think that it is of much moment, as to treatment, on which we decide. The history of the case may sometimes help us, but cannot always be relied upon. As a disease associated with exhausted nervous power, it resembles those attacks of mania that have their origin in a similar cause. All treatment being based upon diagnosis, the correctness of the one is dependent upon the accuracy of the other. When therefore the general character of the disorder is understood, it matters little as to the name we may give it, the object being to distinguish between excitement, the result of inflammatory action, and that which follows depressed nervous influence.

[Of the prognosis Dr. Soltan observes:]

This must be formed upon the same general principles as regulate us in other diseases. The state of the patient, as to whether his constitution be much impaired by dissipation—whether it be the first or second attack of the disorder—are guides which may assist us. When once sleep has been obtained, we may (generally) consider the patient out of danger, though the case reported proves that this rule has its exception. Until sleep be obtained we must be cautious in the opinion we give. Though there be nothing in the case which apparently warrants anxiety, yet there is something so insidious in the progress of the disorder, as to keep us always on the watch. The sudden termination of delirium tremens in a fatal manner, when least expected, admonishes us not to be too sanguine in our expectations of recovery. It must be known to all who are accustomed to witness these cases, that they are occasionally cut short by a fit of an epileptic character. The patient becomes more excited, struggles hard to liberate himself, till, at length, he is convulsed, and ere medical aid can be obtained, is perhaps a corpse. This must be always borne in mind, and we can never feel satisfied as to the state of a patient in delirium tremens till he has had refreshing sleep of some hours' duration, and has lost his fancies and his horrors. It may be always considered favourable if he is willing to comply with the orders of his medical attendant, and can be persuaded to take his food and medicine. Excessive tremor and profuse perspiration are both unfavourable symptoms, as they indicate a very exhausted condition of nervous power. Under these circumstances, stimulating tonics are of use. The weaker the physical powers become, the more do the spectral illusions increase. In the fatal cases which I have seen death took place at an early stage of the disorder, with the exception of one patient, who lived between three weeks and a month. [This could not have been an instance of genuine delirium tremens. Ed.] I am inclined, therefore, to look favourably on those cases which have passed over the sixth or seventh day, provided no unfavourable symptom has arisen.

ART. 10.—*Treatment of Epilepsy.*—M. Plouvier, of Lisle, has presented a memoir on this disease, recommending a system of treatment, which consists in the following processes:

1. The exhibition of medicines which have the power of modifying the cerebral functions. Of these he prefers the subjoined combination:

Extract of belladonna	grs. xxx;
Powdered digitalis	grs. xlv;
Indigo	ʒiiss;
Mucilage sufficient to make	50 pills.

Three or four days before the expected attack, he commences with one pill



twice or three times a day, increasing the dose, if no effect is produced, until some degree of intoxication or somnolence declares itself. He then omits medicine altogether for two or three days after the attack and recommences as before. This plan is persisted in for a year or more, if necessary.

2. Cold baths. These are to be taken every day for two or three minutes. After coming out of the bath, the patient is to be enveloped in blankets to induce perspiration.

3. The boot of Junot. This is an apparatus by which great determination of blood may be induced over a large space, as both or one lower extremity, upon the principle of the cupping-glass. The apparatus is made in the shape of a boot, whence its name, and the contained air is exhausted by means of an air-pump.

*Gazette Médicale*, 11 Sept.

ART. 11.—*On Coma, or Temporary Loss of Consciousness, from Accumulation of Bile, Worms, or other Irritants.* By GEORGE CORFE, Esq.

(*Medical Times*, Oct. 9, 1847.)

[We extract the subjoined remarks from an Essay upon the "Physiognomy of Disease," which throughout exhibits an accuracy of observation on the part of the author not more important than it is rare. After contrasting the different forms of cerebral insensibility which are met with in practice, such as the true apoplectic stupor, the coma of arachnitis, of renal disease, of narcotic poisoning, &c., he thus alludes to the form of coma, which is symptomatic of irritation of the gastro-hepato-intestinal mucous membrane.]

Many cases occur in private practice, the symptoms of which are termed "apoplectic," but which, in truth, may be called "biliary congestion," "hepatic engorgement," "pent-up or morbid cystic bile." I will, however, proceed to mention what I mean by these terms, and, in doing so, I may add that I now write, unfortunately, from some little personal experience of former days. An individual presents himself to your notice describing his symptoms. He is a robust, well-formed man, from thirty to fifty; inclined, perhaps, to corpulency, and may be he is "pansu," or, as the pauper females term it, "high-stomached." He is fond of living freely upon animal food and beer, &c., and follows a somewhat sedentary life. He relates that he is occasionally attacked with pain over the forehead to such a degree that he becomes quite muddled, and unfit for work, or unable to exert himself, either mentally or bodily, in his daily calling. There are, from time to time, tinnitus aurium and vertigo; he gets rather deaf in one or both ears; his sleep is either more heavy and prolonged than usual, or it is attended with horrid and disagreeable dreams, and he is more restless and feverish than he is wont to be. He has but little appetite, his knees totter under him as he walks, his heart intermits, he is occasionally short in his breath, and he thinks himself weak, and out of sorts; but does not know where he is ill, as he suffers little or no pain. Now, these ailments are the forerunners or shadowings forth of a more serious train of symptoms, which may, and do often follow, if active measures are not adopted for their mitigation. The patient goes on to describe a numbness felt down one arm and leg, an odd sensation in the face of the same side; his former symptoms continue, and he becomes uneasy, and seeks for relief. When you see him enter the hospital admission-room, you observe an awkwardness of gait, and tottering or dragging of one leg, an expressionless countenance, and a dull, heavy eye. He is evidently very low-spirited, perhaps bursting into tears before he has told half his sad tale of suffering. Well, such cases formerly would have been called, and still are called by a very large class of practitioners, "apoplexy," and they are not considered safe, nor is it deemed legitimate practice, unless the arm is instantly laid bare, and the lancet made to let out twenty or thirty ounces of blood, with subsequent cupping or leeching in an unsparing manner to the head, &c. Whereas the admirable practice adopted in the medical wards of this hospital by Dr. Seth Thompson has taught me, by the extraordinary and gratifying results, that this practice is both useless and prejudicial.

As soon as the patient is in bed a full dose of calomel and colocynth, such as five grains of the former, and ten grains of the latter, is administered, followed up in four hours by a large cathartic draught; his head is shaved, and, if there is

much heat about the forehead, eight or ten ounces of blood may be taken away by cupping behind the ears. But this is by no means an ordinary part of the treatment. In the course of the following morning the nurse shows us a copious evacuation, dark as the darkest mahogany or chocolate, fetid, abominably so, and containing but little fecal matter. This is cystic bile—bile that has been “laid up” in the gall-bladder—that has become inspissated, heavy, and morbid, and could not find its way into the common duct, owing to the gorged state of the hepatic biliary system on the one hand, and to the congested mucous surface of the duodenum and stomach on the other. This bile is, therefore, a noxious accumulation, a morbid product, and acts as a poison upon the nervous and vascular system, just in the same way, and in somewhat a similar manner to the poison of urea when it circulates in the blood, and is not sent forth by the kidneys. The dose is again and again repeated, perhaps for five, seven, or ten times, and at length pure healthy bile passes away, without fœtor, of a canary colour, and emitting a faint odour very analogous to the smell of the narcissus, or daffodil flower. The head becomes clear; the intellects brighten up; the patient is lively, active, and in good spirits; the sleep is tranquil, refreshing, and moderate; the appetite becomes keen; and he walks across the ward with a firm, steady, and equal pace. But, although this manifest improvement has taken place since he has got rid of the “pent-up poison” that lurked in his system, yet does there still remain a slight weakness of the arm and leg. This excellent practice has been attended with singular benefit. A blister is now laid over the whole length of the longitudinal sinus, and the discharge is kept up from its surface by means of the savine ointment, whilst the purgative treatment alluded to is still persevered in from time to time. Thus have I seen cases, but especially during the last season, become perfectly convalescent, and leave the hospital without the slightest appearance of hemiplegia, and without having undergone any depletion.

The following is an instance of many such cases. A female, about forty-five, entered an hotel in Bond street, as charwoman, between six and seven o'clock in the morning (in March), and soon afterwards became faint, sat down in a chair, when the “boots” went and called up the master, who came down, and, finding her speechless, and unable to walk on one leg, instantly ordered a cab, placed her in it, and came himself to the hospital with the patient. I saw her immediately on her admission, and finding that she was of a spare habit, and not a free liver, I was resolved to use no active depletion, but to commence unloading her liver by calomel and colocynth, in no measured doses. Of course the master knew little of her habits, as she was merely an occasional scourer in his kitchen, &c., only that she was not addicted to drink, as he informed us. I believe it would astonish many practitioners, had they witnessed the beginning, progress, and gratifying termination of this case, under the judicious, bold, and decisive treatment of her physician, Dr. S. Thompson. After the evacuation of large quantities of dark bile, of the most fetid nature, penetrating in offensiveness of smell to such a degree, that the moment a person entered the ward (thirty feet by eighteen feet) he might detect its effluvia; and after the free discharge of a blister applied over the whole vertex of the head, and when pure, pale, rhubarb-coloured bile began to flow, this patient not only regained the full use of her speech and faculties, but she got up, dressed, and fed herself—in short, walked about the wards and hospital garden, and left the institution as perfectly free from those symptoms for which she entered it, as though she had never been the subject of such an alarming attack.

ART. 12.—*Diagnosis in Cerebral Disease.*—Mr. Corfe remarks that it may be laid down as an axiom, that whenever a sudden lesion has been offered to the brain, the eyes are closed, and the patient is insensible; whereas if the same organ is the seat of a slow and progressive disease, the eyes are half closed or wide open, and there is some distortion of the features, irregularity of the pupils, and dulness in the whole countenance, with palsy of the body.

*Medical Times, Sept. 18, 1847.*

[The state of the eyes, as distinctive of sudden from progressive lesion of the brain, requires confirmation.]

ART. 13.—*On Spinal Apoplexy.*—By Dr. PEDDIE.

(Monthly Journal, May, 1847.)

[After relating a case supposed to have been one of spinal apoplexy, but as we consider without sufficient evidence, Dr. Peddie analyses and tabulates all the instances of that disease which he has been able to find recorded, and from them deduces the following inferences.]

1st. Spinal apoplexy occurs at all periods of life, but is least frequent in infancy, and most in the middle ages.

2d. In the largest proportion of cases males are the subjects of it.

3d. Its progress to a fatal termination is in general rapid, almost immediate, when the medulla oblongata is its seat; a few hours or days when it occurs high up in the column, or the quantity effused is great; but life is sometimes protracted when it is to a limited extent in the lower part of the cervical or in the dorsal regions; for in the first instance, the patient survived the extravasation five years, in the second, one year, and in the third, two years and seven months.

4th. Its situation and extent are various. Sometimes it occurs between the bones and membranes, or between the membranes or under the pia mater, but external to the cord, or in the gray substance, as most commonly happens. It is of comparative rarity in the cranial portion of the cord, which appears remarkable when the frequency of extravasation in the annular protuberance is considered; it is of nearly equal frequency in the cervical and dorsal regions; and is least common in the lumbar region. The blood is occasionally mixed with serum, sometimes pure and fluid, but generally coagulated; sometimes it is diffused over a large extent of surface; sometimes circumscribed, assuming the form of small defined clots. These clots are sometimes destitute of any cystic formation, even after the lapse of twenty or thirty-four days; in other instances they appear to have been surrounded by a well-formed adventitious membrane; and in the first of these cases, at an interval of four or five years, the cyst was found empty, and in the second, were contained only the broken remains of a coagulum. Sometimes the blood is found infiltrated in the median line of the cord, or in one of its two halves, or through its entire thickness, merely separating the medullary fibres; but in other instances a portion or even the whole cord, both white and gray substance, may be completely broken up.

5th. The causes of spinal extravasation, both predisposing and exciting, are imperfectly known. The most probable predisposing causes are the strumous or rheumatic diathesis, long-continued dyspepsia, the previous occurrence of cerebral apoplexy, or organic disease of the brain; of exciting causes, the most probable are over-fatigue and strains of the vertebral columns.

6th. The premonitory symptoms are neither well marked nor invariable. The most common immature symptoms are headache, languor, and debility, various degrees of pain corresponding to the part at which the extravasation is about to occur, stiffness of the neck, pains in the arms when the cervical region is affected, feebleness of the legs, and difficult micturition when the dorsal or lumbar regions are implicated.

7th. The matured symptoms are usually, but not always, sudden invasion or increase of pain, without acceleration of pulse; paraplegia, with or without, and when death does not speedily occur, spasmodic contractions, sloughing of the nates, &c.

8th. The *pain* is felt at one period of the spine if the extravasation be limited, but along the whole column when the effusion is more general. It is most acute when the extravasation is external to the cord, and becomes extinct when the cord is compressed. It is absent altogether when the effusion takes place primarily and gradually in the gray substance, without lacerating the nervous filaments, or subjecting the membranes to pressure.

9th. The *paralysis* invariably affects all the parts supplied by nerves originating below the seat of the extravasation. It may assume the form of hemiplegia when the extravasation is small, and compresses a portion of the cord on one side. When this occurs, the effect is *direct*, and not *cross*, as in cerebral hemorrhage.



With the paralysis of the lower extremities the voluntary power over the rectum and bladder is also impaired or lost.

10th. The *sensorium* is unaffected in apoplexy of the vertebral portion of the cord, but insensibility immediately ensues when the medulla oblongata is affected.

11th. Respiration is not affected in apoplexy of the lower half of the spinal cord. When, however, the effusion is in the medulla oblongata, death by asphyxia speedily ensues. The same result occurs whenever the injury is above the origin of the phrenic nerve.

12th. *Convulsions* may occur without inflammatory action.

13th. *Muscular contraction, twitchings, and tetanic spasms* are consecutive to the apoplectic seizure, and indicate the supervention of inflammatory softening around the clot.

[It is not easy, from the above inferences, to deduce any certain pathognomonic signs of spinal apoplexy, and many of the signs may originate in other spinal lesions; but Dr. Peddie thinks] "that if all the parts of the body below a certain point to the spinal part suddenly become paralyzed, especially if pain has been suddenly felt at this point, and if it is ascertained that the spine has sustained no concussion, and that there is no affection of the sensorium, speech, or muscles of the face, and that no fever, muscular spasms, or contractions are present, then there is reason to conclude that sanguineous effusion has taken place. The suddenness of the attack distinguishes it from a morbid growth pressing on the spine, the unimpaired intellect and paraplegia will distinguish it from cerebral disease, and the absence of fever at first, of pain after the palsy is complete, and of spasms and rigidities in the early stage of the disease, will serve to discriminate between it and inflammation of the meninges or medullary substance."

[The treatment of spinal apoplexy is unsatisfactory. Dr. Peddie recommends absolute rest, general or local bleeding, according to circumstances, and derivatives. He gives the prudent caution that, under the depressed condition of the vital energy in the paraplegic state, mercury, iodine, and especially counter-irritation, should be used only with the greatest circumspection.]

#### ART. 14.—*On the Treatment of Sciatica.* By Dr. SEYMOUR.

(*Thoughts on several Severe Diseases of the Human Body, vol. i.*)

The first thing to be done when consulted for sciatica is to ascertain that it really is a purely painful affection of the nerve. There are two diseases which Dr. Seymour states may be mistaken for it, viz., disease of the hip-joint, and disease of the kidney, especially the secretion of uric acid. The diagnosis is thus laid down by him. "Painful affection of the sciatic nerve is distinguished from disease of the hip-joint by no pain being felt on pressing the head of the bone upwards against the acetabulum; by the pain not being increased by striking the heel on the ground; by the absence of swelling and pain in the groin; but, above all, by the absence of fever at the commencement, and of hectic as the disease proceeds to suppuration; and, finally, by pain on pressure in any part of the sciatic nerve, when this is really the seat of the affection."

Nephritic disease is distinguished from sciatica by pain in the forepart of the thigh, numbness of the groin, occasional tenderness of the testicles, and drawing up of one towards the belly; frequent micturition; by the presence of crystallized lithic acid in the urine; and by an occasional fixed pain midway between the umbilicus and the spine of the ilium.

Having ascertained that the pain is dependent upon the state of the sciatic nerve, the physician must endeavour to ascertain whether it is idiopathic or symptomatic of disorder of the stomach, or of the syphilitic taint; or, finally, whether it is indicative of disease in the brain itself.

If the patient be robust and a good liver, a succession of brisk purgatives will cure the disease; the pain frequently in such subjects depending upon distension of the colon. If the pain has succeeded to a chill, cupping followed by blisters with the vapour-bath are recommended. In other cases, in which a person has taken violent exercise after the fatigue of professional life, Dr. Seymour considers

that the pain is best treated by sedatives and tonics, with perfect rest. In a case mentioned he cured the disease by the following:—

R.	Pil. galbani c.	ʒi;	
	Ext. conii	ʒij;	
	Quina	ʒj.	M. ft. pil. xxiv.
R.	Acetatis morphiae	gr. ss;	
	Aquæ flor. aurant.	ʒj;	
	Aquæ font.	ʒx.	M. ft. haust. hsc.

The next consideration is the treatment of the disease when it is symptomatic of the state of the stomach. If the patient is gouty, the preparations of colchicum will be of importance, and in severe cases quinine in large doses during the day, and colchicum at night. The use of colchicum is not limited, very properly, to the cases of supposed gouty origin.

If it is discovered that the disease arises neither from repletion, nor constitutional depression, nor from disordered stomach, care should be taken to ascertain that no syphilitic taint exist.

Having thus spoken of sciatica, which may be considered as symptomatic of other local or previous constitutional disorder, Dr. Seymour next treats of the idiopathic disease. In this form of the complaint he mentions acupuncture in terms of commendation. Other remedies are stramonium, belladonna, and hyoscyamus. Belladonna is to be given with caution, in doses from 1-6th to 1-3d of a grain. When the pain commences in the sacrum, with dull gnawing pain in the loins, Dr. Seymour has seen great relief afforded by the wearing a bandage lined with oil-silk next the skin. The hot-air bath is likewise advised in the idiopathic disease, as is quinine when the powers of the system are feeble. Galvanism is not highly thought of by the author as a curative agent. Finally, some cases are alluded to in which no medicine appears to have any effect in suspending the pain, but opiates in large doses, and these must be persisted in in order to save life. An instructive case in point is narrated.

#### ART. 15.—*On Intercostal Neuritis and Neuralgia.* By M. BEAU.

(*Archiv. Générales, and Medico-Chirurg. Rev.*, July, 1847.)

Since the researches of MM. Bassereau and Valleix, intercostal neuralgia has taken its place among the acknowledged affections of the economy; but with it other cases, for which the term *neuritis* would be more applicable, have been confounded. Dr. Beau's attention was first directed to the subject while contemplating the nature of the painful sensations in injuries of the ribs. Of two such cases, in the one case a severe contusion of the thorax, and in the other actual fracture, took place at the junction of the posterior and middle thirds of the ribs; and in both cases, while some degree of pain existed at the precise seat of injury, that of an intense character was located anteriorly near the sternum. It was the latter that became intolerably increased by coughing, sneezing, or other respiratory efforts. In these cases the pain was explicable only on the supposition of an inflamed state of the intercostal nerve consequent upon the injuries, the severest suffering being referred to the periphery in consonance with a well-known law.

Neither of these patients dying, the positive proof of the existence of such neuritis was wanting; but these cases led to the consideration of others of much more common occurrence, in which the existence of the peripheric pain and the means of proving its dependence upon an inflamed state of the nerve alike exist. Such are cases of inflammation of the pleura, whether simple or complicated with pneumonia. It is familiarly known that the "pain in the side," so constantly present in these, is seated in the great majority of cases near the breast. It is, in fact, but the expression of pain at the peripheric extremity of the intercostal nerve, induced by inflammation of the portion of this nerve which is in contact with the inflamed pleura. The posterior portion of the nerve alone is inflamed, and yet the severe pain is excited at its periphery.

The intercostal nerves, during the posterior portion of their course, that is, from the articulation of the ribs to their angle, are in immediate contact, on the external side, with the external intercostal muscle; and, on the internal side, with the

parietal layer of the pleura. From the angle of the ribs to their termination, the nerves cease to be in immediate relation with the pleura, being separated from it in all the rest of their course by the internal intercostal muscle. It seems scarcely possible for the nerve to be so closely in relation to the inflamed pleura without its participating in the diseased action; and, in point of fact, at post-mortem examinations we always find this portion of the nerve more or less inflamed during the whole portion of its course that is in contact with the inflamed pleura, such inflammation not extending beyond the angle of the ribs, where the nerve becomes separated by the muscle from the pleura. There is frequently a somewhat intense injection, not only of the neurilemma, but of the nerve itself, with enlargement of its substance, as may be seen by comparing it with the uninflamed nerves in contact with uninflamed portions of pleura. The inflamed nerve has not seemed more friable than the others, but is sometimes slightly adherent to the contiguous pleura. It is to be remembered that pleurisies and pleuro-pneumonias are situated, in the great majority of instances, at the posterior portion of the chest, and yet the pain is felt at its anterior portion, as already observed. If this statement be correct, the pain induced at the anterior extremities of the intercostal nerves should vary in its longitudinal direction according to the height in the thorax at which the pleuritic inflammation is seated, and this is precisely what takes place; for, accordingly as the pleurisy affects the first four or five, or the lower four or five intercostal nerves, so is the pain felt at the anterior portion of the corresponding intercostal spaces. And, as the anterior extremities of the last five nerves, instead of turning up with the cartilages, proceed downwards and forwards, between the muscles of the abdominal parietes towards the median line, the pain proceeding from the inflamed pleura is then manifested in the abdomen. It results from these details, that the seat of the peripheric pain of the inflamed nerve may serve as an excellent guide to the exact seat of the pleurisy, as all we have to do is to trace directly backwards along the course of the affected nerve. If local bleeding applied to the seat of pain, instead of the seat of the neuritis, readily dissipates the pains, it does so because it operates a derivation at a certain distance from the inflamed part upon the intercostal vessels feeding the inflammation—just as, in orchitis, we place leeches over the cord, and not upon the scrotum.

Ordinarily all the nerves in contact with the inflamed pleura are equally inflamed, but all are not equally painful at their extremity. It will be found, in general, that that nerve is most affected which corresponds to the rib possessed of most extensive movements. This is why, in most cases, the patient refers the most vivid pain to the anterior portion of the sixth or seventh intercostal space, because in most patients, and especially in men, the seventh rib is that which executes the greatest amount of movement. The patients will generally complain of pain at one of the intercostal spaces, but it is rare for only one nerve to be thus affected; and, if we compress the spaces adjoining that at which the sensations of the patient seem to be centered, we find that others are similarly affected, though in different degrees. The difference in the intensity of suffering is very great; for while some nerves are excessively painful, others, equally inflamed, give signs of scarcely any pain. Differences in pathological susceptibility analogous to this are, however, familiar to attentive observers; and it is the entire absence of such susceptibility in certain individuals, that permits *latent* pleurisy and pleuro-pneumonia to become developed without the manifestation of pain in the side, or any other symptom of the disease.

We have hitherto laid it down as a law, that the posterior inflamed portion of the nerve *only* manifests pain at its anterior extremity; but there are some exceptions to this. We have observed, in the most careful manner, cases of pleurisy in which pain existed simultaneously at the extremities of the intercostal nerves, and at the portion of the spinal column corresponding to the affected nerves. The latter pain is not, however, spontaneous like the former, but for its induction requires slight pressure to be made on the side of the spinous processes corresponding to the inflamed nerves, and then as many painful points will be recognized posteriorly as anteriorly. Every one is aware that, during percussion of the posterior portion of the thorax in pleurisy, pain is produced. This is always referred to the inflamed pleura, but in fact is a posterior radiation of the inflamed intercostals. This pain at the posterior portion of the thorax is not fixed, as the anterior



pain in the intercostal branch properly so called, but in the branch which terminates in the muscles and skin of the back; and yet in neuroscopies we are enabled to show that this dorsal branch is no more inflamed than is the anterior extremity of the intercostal nerve, the pain being, in the one case as in the other, a distant result of inflammation affecting the portion of nerve in contact with the inflamed pleura.

These pains of the side, then, commonly termed *pleuritic*, are justly so called, on account of their relation to pleurisy. But pleurisy does not produce them *directly*, inasmuch as they result from the inflamed state of the proximal extremity of the nerve. The pains which continue to be felt after the cessation of a pleurisy, and which are usually referred to adhesions, are, in point of fact, produced by the neuritis become chronic. When there is inflammation of the lung without inflamed pleura, we have then no pains in the side, no neuritis capable of producing them having been generated. There is another form of pleurisy, in which the intercostal nerves are liable to become inflamed—that which is consecutive to pulmonary tubercle, and which is then seated at the upper part of the chest. The pain resulting from this is felt at the anterior part of the first intercostal spaces, but is much less severe than that of acute pleurisy. Those dull pains existing just under the clavicles, and which, according to pathologists, are a frequent symptom and an immediate result of the presence of tubercle, are, in fact, produced by the development of pleuritis consecutive to the tubercle. Besides these pains, phthisical patients occasionally suffer from others in the supra-clavicular region of a far more intense character, forcing cries from the patient, and requiring the endermic use of morphia for their relief. These, in all probability, depend upon a neuritis of the first intercostal nerve, which sends one of its branches to anastomose with the brachial plexus. This last is in communication with the cervical plexus, and we can understand how the neuritis of the first intercostal may in this way induce pain in the region of the neck, and even down the arm.

In comparing intercostal neuritis with intercostal neuralgia, we should first distinguish the varieties of this last. The most important of these is that described by M. Bassereau as “commonly sympathetic of an affection of some viscus, whose suffering is transmitted to the intercostal nerves by means of the anastomoses of the great splanchnic.” M. Bassereau believes the uterus and its appendages to be the seat of the irritation thus propagated, inasmuch as women are much oftener the subjects of intercostal neuralgia than men, and that the women so affected, in the majority of cases, are suffering from some disturbance in the uterine functions. M. Beau demurs to this latter conclusion, believing that disorder of the digestive organs is the point of departure of the neuralgia; for—1, the great splanchnic is in communication with the semilunar ganglions and lunar plexus; 2, although these females are suffering from derangement of the uterine functions, they are so in a much more marked degree from that of the digestive organs; and, 3, that in all the male patients liable to this neuralgia, the number of whom is greater than M. Bassereau believes, there is a marked disorder of these. Dyspeptic symptoms need not be excessive, and yet the disorder they indicate may have a pathogenetic influence upon various organs. So connected with dyspepsia has M. Beau long considered this neuralgia, that he always terms it in his clinical lectures the *dyspeptic neuralgia*. Whenever such neuralgia disappears completely, the digestive functions have recovered their normal integrity; and to combat the neuralgia effectually, we must attack the dyspepsia—all means directed to the relief of the former, without attention to the latter, being merely temporary and palliative in their operation. This dyspeptic neuralgia affects principally the nerves corresponding to the ganglions, which furnish the constituent branches of the trisplanchnic nerve, that is to say, the intercostal nerves comprised between the fifth, sixth, and seventh intercostal spaces. As in neuritis, there is always one nerve more affected than the neighbouring ones, and that corresponding to the rib possessed of the most extensive movements. Generally five or six intercostal spaces are simultaneously attacked, although in different degrees. This neuralgia, as shown by M. Valleix, also frequently presents three painful points: one at the termination of the intercostal branch; another where the middle perforating branch is given off; and the third over the dorsal branch, near the spinous processes. Its duration is generally chronic, like that of the dyspepsia upon which it depends,

and during its progress it exhibits sometimes regular, but generally irregular intermissions.

The second variety of intercostal neuralgia is that dependent upon rheumatism, *rheumatic neuralgia*, commonly termed *pleurodynia*. Very frequently only one of the intercostal nerves is affected, but the pain is very intense, especially if excited by pressure. It sometimes reaches the extent of preventing the patient lying down, and impeding the respiratory movements, which become short, irregular, jerking, and accompanied by interrupted exclamations. It is worse at night than by day, the maximum of its intensity being seated at the anterior portion of the intercostal nerve. It may be sometimes excited posteriorly by pressure over the dorsal branch of the nerve, but it never spontaneously arises there, as it so frequently does in neuralgia of a dyspeptic origin. This acute form only continues for some days, and may be accompanied by fever, when it puts on the greatest resemblance to neuritis. It affects men as frequently as women, while dyspeptic neuralgia, just as dyspepsia itself, most frequently affects women.

In comparing neuritis with these neuralgiæ, we observe that their symptoms have much resemblance, especially as regards rheumatic neuralgia. The pain of this, as of neuritis, felt towards the anterior portion of the intercostal space, is very intense. It is less so in the dyspeptic variety, and the patient in the latter frequently complains of pain over the dorsal branch of the nerve, which in neuritis or rheumatic neuralgia is generally only produced upon pressure. The dyspeptic form especially affects the nerves between the fifth and seventh ribs, while the seat of pain varies in the others according to that of the pleurisy, or the part affected by the cold, which has induced the rheumatism. Dyspeptic neuralgia is liable to frequent intermissions and exacerbations, which neuritis and rheumatic neurosis rarely are.

"The ideas, so long since considered as classical, respecting the vivid sensibility of the pleura and the pungent kind of pain resulting from its inflammation, ought, I believe, to be discarded, seeing that the acute and pungent pains of pleurisy do not proceed immediately from the inflamed pleura, but from the intercostal nerves, which the inflammation of the pleura has invaded."

### SECT. III.—DISEASES OF THE RESPIRATORY SYSTEM.

ART. 16.—*Account of a Physical Sign of Pneumonia of the Apex of the Lungs.* By W. BOLING, M. D. (U. S.)

(*Amer. Journ. of Med. Sciences*, July, 1847.)

The writer remarks that his experience, so far as it extends, is confirmatory of the opinion that Pneumonia, commencing at the apex of the lung, is, in proportion to the number of cases, the most frequently fatal form of the disease. He has met with about six cases of this affection, at least has recognized or identified about that number. They all proved fatal. Three of these he notices.—In one, the subject of which was a powerful and robust Irishman, 30 years old, "fond of a dram," but not decidedly intemperate, and previously in good health, the disease supervened on an attack of acute bronchitis, about the fifth day, and proved fatal on the fourteenth day, counting from the first day of his illness. In the second case, the patient was a rather delicate negro woman, about 28 years old; the attack commenced during a slight indisposition of a catarrhal character, and proved fatal on the thirteenth day. The other patient was a strong and robust negro woman, about 22 years old, previously in good health, and in her case the termination was on the ninth day.

The general symptoms and march of the disease in these cases did not differ in any material point from those in the more common form of pneumonia, except in the point of commencement, and in this, perhaps—that the morbid alteration had proceeded to a less extent, at the time of death, than is commonly the case in the latter; that is, death supervened from a less extensive local disease. In the other cases, the lung ran most rapidly into a state of hepatization, the solidification not being preceded by the crepitant bronchus, but by a total absence of the respiratory

murmur, while the chest over the affected part remained still resonant on percussion.

The author's object, however, in the present remarks, is simply to speak of a physical sign that was present in each of the three cases detailed, which he presumes also to be present in others of the same character, the observance of which may probably lead to a correct diagnosis at an earlier period, in some instances, than would otherwise be made. This is a fine mucous or crepitant rhonchus, seemingly seated in the larynx, loud enough to be heard distinctly at the distance of two or three feet from the patient, and so *persistent*, that it is not removable, or but momentarily, by any effort to expectorate which the patient may make, while at the same time, there are present none of the signs of bronchitis or laryngitis. Though it is exceedingly annoying to the observer to hear it, because it impresses him with the belief that it is distressing to the patient, and he looks with a feeling rather of impatience for an attempt, by an effort to expectorate, for its removal, the patient seems perfectly indifferent to its presence, which would not be the case were it really produced by the presence of a small quantity of tenacious mucus in the larynx itself. The sound, then, is only seemingly produced in the larynx, for on applying the stethoscope immediately under or just above the clavicles, it will be discovered to proceed from the apex of one or the other lung, which will be found the seat of inflammatory action. It would seem that the sound there produced in the pulmonary vesicles must be conveyed by the larger bronchial ramifications, numerous and superficial at this point, to the larynx, where, in consequence of the thinness of the tube, or rather the thinness of its covering, and its proximity to the surface, the deceptive impression of its production in this organ, from the presence of a small quantity of viscid mucus, is created.

It is the indifference of the patient to the presence of the sound, but still more especially its *persistence*, which constitutes its peculiar and distinctive feature, and upon which its value as an evidence of pneumonia commencing at the apex of the lung depends. In other affections of the lungs and air-passages, more especially in bronchitis, we may have a somewhat similar sound produced in the larynx itself, by the play of the passing air through a small quantity of viscid mucus there collected; but under such circumstances it is removable by coughing, or an effort to expectorate, and once removed may not return again, or only after a considerable interval, when a fresh collection of mucus has taken place. The patient, too, does not manifest the same indifference in regard to its presence, but the mucus producing it soon excites an effort for its removal.

As pneumonic inflammation, in the greater number of cases, commences at the base of the lung, the inexperienced stethoscopist, on observing the general symptoms of pneumonia present, may neglect to apply his instrument over the apex of the organ in attempting to discover the location and extent of the disease, and failing to detect any physical evidences of morbid action near the base, might at once attribute the symptoms present to inflammation, somewhat circumscribed, of the central portion of the pulmonary texture; too limited in extent, and too remote from the surface to give rise to the peculiar physical phenomena. To be sure, were he to examine the entire chest, the disease would be detected. The recollection of the sign above named leads at once to its locality.

[This sign we have noticed, on several occasions, in phthisical patients. We do not recollect that we have observed it in any other pulmonary affection. The sound of the same character, which is alluded to by Dr. Boling, is evidently produced in one of the larger bronchial tubes, and consists rather of a prolonged series of "clicks," than of a distinct crepitation. Experience has led us to be prepared to find tubercular softening, when we have met with this sound previous to auscultation.]

#### ART. 17.—*On the Treatment of Pneumonia.*

By M. TESSIER, Physician to the Hôtel-Dieu, Annexe.

(*Revue Médico-Chirurg.*, Août, 1847.)

[The paper of which we here give an abstract, is the continuation of one in which the author has investigated the value of an exclusive treatment of pneumonia by bleeding, by tartar emetic, &c. In that portion of his writings he decides



justly that any exclusive method of treating the disease is unscientific and unsuccessful, and he now inquires into the value of what he calls the *co-ordinate* system, or that which includes a series of different means adapted to the different phases of the disease. Of this series the first remedy treated of is blood-letting, which, as will be seen, he recommends to be performed repeatedly, and in small quantities. This is a proceeding at variance with British practice, and one which, in the majority of inflammatory diseases, we should unhesitatingly condemn; but it must be recollected that, in the treatment of inflammation of the lungs, our object is not so much to "knock down the inflammation," as is the common parlance, but to diminish the quantity of blood circulating through the organs, whose capacity is diminished by disease, and thus to prevent the additional evil of the circulation of imperfectly arterialized blood. This object we have long considered to be accomplished with the least risk of prostrating the vital powers (an effect specially to be avoided in pneumonia) by small bleedings repeated at short intervals. We are pleased, therefore, to find that our ideas have received the support of a well-observed series of a hundred cases which form the basis of the author's remarks. We do not, by this statement, intend to admit our perfect accordance with the author's mode of treatment; on the contrary, we consider his endeavour to master the disease by blood-letting alone during the first few days, and his resorting to antimony only when he finds the inefficacy of bleeding *per se*, as bad practice. The usual plan followed in this country of giving antimony with calomel from the first is, of course, the one preferred by us. Though disagreeing with the author on this point, we regard his observations as calculated to be of service by calling our attention more directly to the indications afforded by the progress of the disease and its variations day by day. Respecting blood-letting the author speaks as follows:—]

The value of small bleedings of eight or ten ounces at short intervals cannot be too strongly urged. It appears to be the true method of employing this remedy, and the objections are purely theoretical. Of course the number of bleedings is to be proportioned to the general strength of the patient, but it is better, in pneumonia, to bleed once more than is necessary than to omit one useful bleeding. There are many practitioners who think that by this mode of bleeding we plunge the patient into a state of anemia, and render his convalescence tedious. This is the opinion of a class of men who guess instead of observing.

Sometimes it happens that the indications for bleeding are obscure, either from the mildness of the symptoms or from the vital depression of the patient. In the first case blood may be taken without hesitation; but in the second certain precautions are to be observed. In this case, we recommend a very small exploratory blood-letting; if it is beneficial we bleed again in a few hours. If the second bleeding does not produce a proportionate amendment, we stimulate the patient by hot diluent drinks and sinapisms; if by this means reaction is established, we bleed again. We have seen a patient, who at first ill bore the abstraction of four ounces, subsequently bear with benefit four or even five bleedings of the same quantity.

[The author admits that this system will not succeed in old men or in children, nor indeed in all cases of adults. When no relief follows the abstraction of blood, but the inflammation proceeds in spite of it to the stage of hepatization, when urgent dyspnoea ensues, he protests against its further employment as injurious. In this case he is guided by the stage of the disease. He thus explains himself:—]

We have observed that in pneumonia, there is a distinct remission on the seventh day, which is, *par excellence*, a critical day; and if the patient does not improve on that day the prognosis becomes more serious. Our object, therefore, must be to induce a crisis on this day. According as the antiphlogistic treatment has been begun on the first, the third, or the fifth day, we have so much more or less time before us from the moment at which we have discovered the inability of blood-letting, to the seventh day, when the ultimate result of the case is in most cases decided.

Suppose we have arrived at the sixth day of the disease without making any impression upon it by bleeding, the best plan then is to apply a large blister over the affected side, and to exhibit hot fluids in large quantities, and by this means induce copious perspiration. If this occurs, our purpose is gained. If the resolu-

tion of the hepatized lung be not complete at the end of forty-eight hours from this time, a few doses of tartar emetic will in general dissipate all traces of inflammation.

It does not, however, follow that the case is lost if it is not amended on the seventh day. Resolution may occur on the ninth, the eleventh, or the fourteenth day. During this interval the position of the medical attendant varies accordingly as the symptoms decrease, or the inflammation merges to the third stage, or that of suppuration. In the latter case, though not invariably, the disease is generally fatal.

[The author states that he has never seen an instance of recovery from pneumonia after suppuration. The treatment recommended by him is ipecacuanha in small doses, quinine, and musk. If the lung remains in the first stage at the end of seven days, he regards the case as a mild one. There is a time at which some patients, during convalescence, exhibit symptoms which might be taken for a relapse. On this subject the author remarks:]

We cannot be too much on our guard; these symptoms (pain in the side, dyspnoea, &c.) are sometimes taken for a relapse, and the patient is bled. I have seen many such thrown by this into fatal collapse. For this reason I would insist on the danger of blood-letting in *carnification* of the lung. The proper treatment, in these cases, is to give ipecacuanha in small doses, and blistering.

ART. 18.—*On the Powers of Strychnine in the Cure of Chronic Bronchitis.*

By Dr. P. H. CLARKE, of Port Washington, W. T.

The author relates in this paper several cases of what he considers to be chronic bronchitis cured by the administration of strychnia.

"Having been afflicted," he says, "a great number of years with bronchitis, and finding no medicines which gave me relief, I was induced to try the effect of strychnine, which resulted in a perfect cure. My symptoms, when I commenced using it, were emaciation, night-sweats, and continued mucous expectoration, attended with cough, at times very severe, after which the muscles of the larynx were so completely relaxed that I could not utter a sound above a whisper, but unattended with pain. I commenced the use of the strychnine, as advised, by taking one-twentieth of a grain suspended in mucilage, three times a day, and increased the dose every third day until I took one-fifth of a grain. I used the remedy about four weeks, and have never experienced any difficulty since. I was much astonished at its results, and more especially at the effects it produced upon the contractility of the muscles of the larynx, as well as upon the muscles of the extremities."

That the strychnia should be beneficial in restoring the voice, in cases in which its loss results from deficiency of power in the muscles of the larynx, is in strict accordance with its known action, and need not excite surprise. As a tonic it may, also, *indirectly* aid in the relief of chronic bronchitis, but that it possesses any direct action in the cure of that disease is, to say the least, problematical.

*Illinois and Indiana Med. and Surg. Journal*, April and May, 1847.

ART. 19.—*Galvanism in Aphonia.*—The following is a description of one of the earliest modes of applying galvanic action to the treatment of disease, and, on account of the long continuance of its effects, is thought by Mr. Donovan to hold out considerable advantages. In the case of a young lady, affected four years with hoarseness, and more or less complete aphonia, blisters, mercurials, &c., had been used, without any relief. Her physician, Dr. Grapengiesser, then thought of increasing the action of blisters by galvanism, and accordingly, having vesicated each side of the larynx to the size of a shilling, he covered the excoriated spots on one side with a zinc plate, to which a wire of the same metal was attached, and on the other with a piece of silver. As soon as he brought the two plates in contact, a burning sensation at those spots arose, and the larynx heaved up and down convulsively, with loud sobbing. On alternately breaking and rejoining the contact, these motions became so violent as to be almost insupportable. After this process had been continued for a quarter of an hour, a watery humour began to run from the excoriated surfaces. The apparatus was removed, and towards

evening she began to speak more audibly, and the improvement continued next day, but was lost again on the fourth or fifth day. The process was then repeated with the same results, and the apparatus was left on all night, with the effect of permanently restoring the voice.

*Dublin Quart. Journ., Feb., 1847.*

ART. 20.—*Treatment of Coryza*.—M. Deschamps states that he succeeds in suspending a common cold, if taken at the onset, by injecting into the nostrils a weak solution of the extract of opium. The liquid may be either thrown up with a syringe, or alternately snuffed up each nostril, the other being closed with the finger.

*Journ. de Chirurgie, April, 1847.*

## SECT. IV.—DISEASES OF THE CIRCULATORY SYSTEM.

ART. 21.—*Case of Double Aorta, with Aneurismal Dilatation of one Division.*

*(Lancet, Sept. 4, 1847.)*

[The following singular case was recently read by M. Bouillaud, and is probably unique.]

The patient, a stout man, was of pallid complexion; the subcutaneous veins of the extremities were prominent: no œdema or ascites; respiratory murmur good; the cardiac region presented no prominence; the heart's motions were visible externally; the apex impinged upon the sixth intercostal space, to the left of a vertical line drawn through the left mamma; precordial dullness over a space of five inches and a half vertically; a double movement corresponding to the systole and diastole was perceived in this region; the heart's impulse was evidently augmented; the normal sound was obscured by a double bellows-sound, the second sound being the most audible.

The right side of the chest presented a distinct prominence, which was dull on percussion, and also exhibited a double movement isochronous with the heart's action. Over the same spot a very strong souffle, large, diffuse, and rough, prevailed, but without any clicking sound, which arose no doubt in the aorta. The hand also perceived a vibratile tremor, isochronous with the diastole of the aorta. A similar tremor was noticed over the arch of the aorta, at the top of the sternum, where there was a prominence. The tremor was still more distinct beneath the clavicles. The subcutaneous veins of the thoracic region were abnormally developed, chiefly on the right side. M. Bouillaud's diagnosis was—hypertrophy of the heart; dilatation of the ascending aorta, with cretaceous deposit.

No change in the patient took place for the space of two or three months, when he was seized with cough, with dry crepitation and dyspnœa, for which he was bled, with relief. A blister was also applied, which caused strangury with albuminous urine. The latter symptoms continued, and œdema was observed about the ankles; the chest symptoms increased, and the man died.

*Post-mortem—Thorax.* Numerous adhesions at the posterior part of each lung. Lungs congested, and pushed out of their place by the enlarged heart and dilated aorta. Heart very large, apex obtuse, and pushed to the left. It was generally hypertrophied; weighed twenty ounces; the cavity of the left ventricle was very dilated, so that it would hold an egg; a little below the aortic orifice the thickness of the wall was four-fifths of an inch, at the apex two-fifths; the aortic orifice quite unobstructed, very ample, had an interior circumference of about four inches and a half; the valves large, generally thickened and hypertrophied, but otherwise well formed and sufficient; the mitral valve was also hypertrophied, but otherwise perfect; the cavity of the right ventricle was also enlarged, but to a less degree than the left; the valves large, but otherwise normal; both auricles were enlarged and hypertrophied. As soon as the chest was opened, the large dilated aorta presented itself; but great was the surprise when on opening it, and tracing it to its origin from the ventricle, a second vessel was observed to spring from that cavity, which was soon found to be applied by its back, as it were, to



that of the other, and the two having a common partition. These two aortæ, or these two divisions of one and the same aorta, have the same length, but not the same diameter. The larger arises from the right, the smaller from the left part of the left ventricle. From their origin they run, one seated behind the other, to a point opposite the last lumbar vertebra, where they terminate—the larger in the right common iliac, the smaller in the left common iliac. In the sternal portion, the larger vessel partially conceals the smaller, which lies behind it. In their descending course, the larger artery is placed to the right, and a little posterior to the smaller: the smaller to the left, and a little in advance of the former. The septum which thus divides the aorta commences on a level with the aortic valves. At that point it presents itself in the form of a diaphragm, pierced on the right by an annular opening of about an inch in diameter, and this opening appertains to the larger aorta, which is dilated at its origin, as will be presently noticed. The left aorta, at its commencement, presents an infundibuliform cavity, which becomes constricted about one inch and a half above, where it is continuous with the ventricular cavity. Between the double opening, which is observed at the origin of the inner aortic dissepiment and the single orifice of the left ventricle, there exists a sort of pouch, which the blood from the ventricle must traverse, in order to enter the two openings of the aortæ above. Of the three valves of the aortic orifice, one was common to the two aortæ, the two others belonged respectively, one to the right, the other to the left vessel. The inter-aortic partition, in its descending portion, is pierced by several small, round, or lenticular openings, which establish a communication between the two aortæ; these orifices are more numerous in the lower part of the septum, down to the commencement of the iliac vessels, than above. Just above the common iliacs, the septum offers a much larger opening than elsewhere, having the greatest resemblance to the unobliterated foramen ovale: its diameter is two-fifths of an inch, and, like the foramen mentioned, is furnished with a sort of valvular fold with a thin margin.

The brachio-cephalic trunk, the left carotid, the intercostal and lumbar arteries, the celiac and mesenteric arteries, superior and inferior, are furnished exclusively by the lesser aorta. The left subclavian arises from both the larger and smaller vessel, so that, like the aorta itself, it is double or bifid; and between its two parts a partition is found, resembling that of the aortæ. Of the coronary and renal arteries, one is furnished by the greater, the other by the lesser aorta.

At the corresponding points of origin of the brachio-cephalic trunk, of the left carotid, of the celiac trunk, and of the mesenteric arteries, the larger vessel gives off no branch, but presents short cul-de-sacs, as vestiges or rudiments of the arteries they by their position represent. Excepting where it is unusually dilated, the interior circumference of the large vessel was about two inches and a half. At its origin, it has been noticed that the small vessel was dilated like a funnel, where its circumference was three inches and three fifths, but only two inches at the point where the brachio-cephalic was given off; and again, three inches and three fifths at an enlargement of its transverse portion; one inch and three fifths in its descending thoracic, and from one inch and two fifths to one inch and three fifths in its abdominal portion. The inner circumference of the brachio-cephalic is one inch and one fifth; that of the left carotid, four fifths of an inch; of the common iliac, from the large aorta, one inch and four fifths—from the small vessel, one inch and two fifths.

It has been noticed that the greater vessel, immediately after its origin, was the seat of an enormous dilatation, which inclined over to the right side of the chest, occupying the space indicated by the dullness on percussion. The volume of the tumour may be represented as of the size of a turkey's egg. Within it were recent clots of blood, not adherent. The walls were composed of the three normal coats, rather thickened than the contrary, notwithstanding their dilatation. The circumference of the tumour within was from five inches and one fifth to five inches and three fifths. This dilated portion, however, became suddenly constricted at the point whence it took its transverse course, but presently dilated again into another tumour of the size of a hen's egg, with its walls composed of the three usual coats. After this the artery preserved a uniform calibre; but throughout its course it is the seat of a calcareous or cretaceous degeneration, so to speak, confluent; and its internal surface is uneven and rough. The calcareous

lamellæ are the closest in its transverse portion, where it contributes to form the left subclavian. Nevertheless, this diseased condition disappeared for a little distance from that point. The portion contributed by this larger aorta to the left subclavian, was, like itself, degenerated.

The small aorta was not affected like the larger, nor the arteries given off from it. On its internal lining a few yellow spots were seen, standing out slightly in relief. Further, for about two inches and a half, between the sixth and eighth intercostal artery, a kind of prominent lamina, unequal and rough, and of a fleshy appearance, was observable (the fibres distinguishable had a longitudinal direction). Throughout the extent of this lamella, the walls of the aorta had a greater thickness than elsewhere, where the internal coat of the artery was even, smooth, and polished. In that portion of the small aorta, extending from its origin to its curvature, some rugosities are met with, of a fibrous or fibro-cartilaginous character, but not having any calcareous scale, properly so called. We must add, that at the point of the curvature of this lesser aorta, there was a sacciform dilatation, applied by its back to the dilatation of the transverse portion of the larger vessel mentioned above.

To terminate what relates to the state of the vascular system, it may be noticed, that the venæ cavæ, superior and inferior, the jugular and subclavian veins, and all the abdominal venous system, were distended with very dark blood, in part coagulated, or simply in broken clots. In the peritoneal cavity a considerable quantity of serum was found; the stomach and intestines appeared healthy; the kidneys seemed a little too large, and were rather red; their capsule was opaque at points, and strongly adherent to the cortical substance. The lining of the pelves of the kidneys was a little thickened and injected. Nothing particular was seen in the head, save an abundance of serum, and a feeble consistence of the cerebral matter.

ART. 22.—*On Pericarditis.* By M. DE BARTOLOMÈ, M. D.

(*Prov. Med. and Surg. Journal*, May 5, 1847.)

[The author commences the essay of which we give an abstract by criticising the definition of the disease as "inflammation of the serous membrane of the heart," and stating it to be his opinion that the fibrous structure of the sac is, in many instances, the first to take on inflammatory action. That it should be so, he regards as a necessary consequence of the connection between the disease and rheumatism, and the identity of tissue composing the pericardium and that of the fibrous portions of the joints. After some further remarks on the rheumatic origin of pericarditis, he enters upon the following general description of the disease.]

*Morbid Anatomy.* After the inflammation has attacked the serous pericardium, the morbid alterations it produces may be described according to the four following heads: Redness and vascularity of the membrane; effusion; formation of false membranes; and their conversion into cellular tissue, fibro-cartilage, bone, &c. But I must confess that I am at a loss how to describe what I consider to be the first stage of the disease—namely, that in which the fibrous pericardium alone is affected; for, as the fibrous tissue in the neighbourhood of joints does not present after rheumatism any pathological appearances, except in a few protracted and very severe cases, we cannot expect to find any morbid alterations in the pericardium when the disease has existed in its fibrous layer only. Thus it happens, as Laennec assures us, that in many instances he could find no trace whatever of the disease, although, from the symptoms which had characterized it, he was persuaded that it had been the only cause of the patient's dissolution. In all such cases I am convinced that the inflammation had existed only in the fibrous pericardium, and had produced its fatal effects by the impediment which it must have offered to the free action of the heart. The case already alluded to, as described by Laennec, seems clearly to have been one of this description.

The redness over the pericardium is seldom uniform; sometimes it assumes an arborescent appearance, but most commonly shows itself in small patches, or dots, alternating with the natural colour of the membrane. This alteration of colour is not invariably present after pericarditis, for Laennec found in some cases, that although the symptoms during life, and the thickness of the false membranes,

indicated the inflammation to have been very severe, yet on the most attentive examination he could discover no redness whatever. Although some have asserted that the redness may have disappeared after death, as it does from the surface of persons who have died of erysipelas, yet I think that the experiments of M. Scoutteten go far to prove that inflammation of a serous membrane will invariably exhibit increased redness after death.

The effect of inflammation, in almost all textures of the body, is the effusion or exudation of a particular morbid secretion. In pericarditis it generally consists of coagulable lymph, accompanied by more or less serum. When only lymph and serum are effused, the latter sometimes exceeds the former in quantity. The effused lymph forms a membranous covering, more or less perfect, on the surface of the pericardium, and according to Laennec, rarely presents the equable surface peculiar to the membranes formed during pleurisy, but, on the contrary, it is pitted, mammillated, and rough. The pericardium, whatever changes may be going on within it, is very rarely thickened, the membranes having been sometimes, according to Dr. Hope and M. Bouillaud, confounded with thickening of the pericardium itself.

*Diagnosis.* The diagnosis is not always easy. The disease has been mistaken by some of the best practitioners for affections of other organs, which, on dissection, have been found perfectly healthy. Laennec assures us that he often found on dissection all the evidences of the existence of pericarditis, when nothing had occurred during the life of the patient to excite the slightest suspicion that such a disease was present; and again, that frequently he could find no trace whatever of the disease, when he was sure that it had been the only cause of the patient's dissolution; and he observes that pericarditis is a disorder, the existence of which, during the life of the patient, the most able physicians rather guess at than recognise. Dr. Latham mentions two cases in which the disease was mistaken for disease of the brain, and treated accordingly, but dissection proved them to have been cases of pericarditis. Andral and Corvisart mention two similar cases; the latter was of opinion that the cases where diagnosis was most obscure, were always complicated with pleurisy, pneumonia, or some other diseases of the thoracic viscera.

In opposition to this statement may be quoted Laennec, who says that the most complete latent affections he has met with were in patients whose thoracic viscera were in other respects quite sound, and who had died of disease of the abdomen.

The pulse at the commencement, that is, when the fibrous membrane alone is affected, will generally be found to be that of acute rheumatism, but will vary in proportion as the serous membrane becomes affected; and it is owing to this that the pulse of pericarditis is so different in different subjects, and so variable throughout the course of any particular case. We cannot therefore form our diagnosis by the pulse alone, as it may derive its particular character in some cases not so much from the affection of the pericardium, as from rheumatism in other parts of the body on the one hand, or from inflammation of some other serous membrane on the other.

All authors seem to agree that the most unequivocal sign is the presence of pain over the region of the heart, particularly if aggravated by pressure, in whatever way excited,—whether by full inspirations, change of position, or artificially. This latter circumstance has been known to aggravate it so intensely as to have caused a fit of syncope. "The pain," says Dr. Hughes, "which according to my experience is a constant attendant upon rheumatic inflammation of the pericardium, is fairly explicable by the inflammatory rheumatic affection of the fibrous external covering to the serous membrane, the fibrous tissue being the natural seat of rheumatism, of which pain is the most common, if not the universal symptom."

It is frequently difficult to form a correct diagnosis of this disease. Inflammation of some other thoracic viscus may be readily mistaken for it; and by pressure, should it be applied, we shall excite pain, whether the heart or some other organ within the cavity of the chest be affected. Should this be the case, we must mainly trust to the symptoms elicited by auscultation and percussion, which will generally be sufficient to guide us; but in some obscure cases we shall have only negative symptoms to guide us, and we must then decide upon the nature of the



case by the absence of such symptoms as characterize disease of the other thoracic viscera.

[*Physical signs.* The author's account of the physical signs of pericarditis is not sufficiently perfect to warrant our transferring it to our pages; we shall therefore omit this, and proceed to his description of the treatment.]

*Treatment.* The list of remedies which can be employed for the cure of pericarditis with decided advantage is rather limited. The abstraction of blood generally ranks foremost, and venesection seems to be preferred; yet I think that this mode of abstracting blood is far from being absolutely necessary, and that, in the majority of cases, topical bleeding is preferable; first, because it answers the same purpose as venesection; and, secondly, because it does not produce that distressing debility, and the violent reaction so injurious when the lining membrane of the heart, and more particularly when the valves are affected.

That topical bleeding is in itself often sufficient, is clearly shown by Dr. Hope, who assures us that he has seen a single prompt and abundant application of leeches, or a cupping, at once subdue every formidable symptom. Dr. Alison says that, in rheumatic pericarditis, general blood-letting is not advisable. I do not mean to say that I would in no case employ general bleeding, but merely that I would not do so on every occasion; for, unless the symptoms are very urgent, I consider topical bleeding as preferable. In cases where they are very pressing I would bleed, but not to a large extent at first, and then trust to cupping and leeches. If the pain and action of the heart are not subdued by the first topical bleeding, it should be repeated, but sometimes, as already stated, such repetition is unnecessary. Next to bleeding I would rank severe counter-irritation. Colchicum, digitalis, and antimonials I have repeatedly employed with advantage, as also mercury.

[It appears to us, from the above account of his treatment of the disease, that the author's practical acquaintance with it cannot be very extensive; we agree with him in one point, that general bleeding has not the power over the inflammation which it exerts when other serous membranes are affected, but we are entirely at variance with him respecting the slight estimation in which he holds mercury; we are well assured that, in a case of pericarditis, whether of rheumatic origin or not, the action of mercury is absolutely necessary; although without its assistance we may possibly save life, we shall only do so at the risk of leaving permanent unsoundness of the heart, with its slowly, but surely fatal results. A far better account of the most approved practice will be found in the next article, in which the above paper is criticised by Dr. Shearman.]

ART. 23.—*Treatment of Pericarditis.* By Dr. SHEARMAN, Rotherham.

(*Provincial Med. and Surg. Journal*, June 2, 1847.)

Dr. Latham, in 1847, says, "In foreign practice no mercury is used from first to last, but all the power of common antiphlogistic remedies is brought to bear upon the disease, and thus its symptoms are mitigated or subdued, yet they return again and again, and are again and again mitigated or subdued, and so the patients are kept alive for a week or ten days, and then they die, in the great majority of cases."

M. Bouillaud's treatment of pericarditis is of this antiphlogistic description; he never uses mercury; and, in his treatise on it, he says almost every case is found on dissection to have the pericardium adherent. In inflammation of the pericardium, the products, or exudation of the inflammatory action, are deposited in a shut sac. There is not only congestion, great nervous and vascular irritation, and determination of blood, with their usual consequences, but a large quantity of lymph and fibrin are exuded, which, so far as I know of the remedies for inflammation, can only be checked, stopped, or absorbed during the time the system is under the specific influence of mercury.

Bleeding, both general and local, is undoubtedly invaluable, and ought to be carried to such an extent as to cut off the supply of a certain quantity of blood to the part, and decrease the quantity of fibrin in the blood. Purging to a certain extent is necessary, but that will not absorb either the serum or lymph. Opium is of the greatest benefit, by soothing the excessive irritability of the nervous and vascular excitement, and relieving pain; and counter-irritation, particularly blister-

ing, is invaluable, by exciting the action of the absorbents near the seat of the lesion, and in that way relieving the distension of the vessels. But all these remedies combined will not prevent a case of pericarditis making progress to that stage which ends in adhesion and premature death.

I have carefully examined the works of Stokes, C. J. B. Williams, Watson, Elliotson, Hope, Copland, Joy, and Latham, and I find my opinions borne out by all of them. I am convinced that mercury has the power of doing something more in inflammation of the pericardium than venesection and other antiphlogistic remedies can do; and that upon this something being done the life of the patient often depends.

Dr. Taylor, one of the physicians to University College Hospital, has published in the "Lancet" forty cases of pericarditis which he has treated in the hospital under the constant inspection of the pupils. I have read them all, and he has never once omitted to do all in his power to bring the patients under the specific influence of mercury: where he has failed to do so his patients have died, but where he has succeeded, his patients have generally recovered. These cases are worth reading, being written by one whose knowledge of the disease is more extensive than that of most authors.

In *iritis* the influence of mercury is quite visible in removing effused lymph, and it thus obviously promotes absorption, as well as prevents effusion. In syphilitic ulcers, mercury soon removes the calous indolent margin. I have heard an opinion canvassed, that mercury destroys the red particles of the blood, and produces a disposition to erythematic inflammation, which is incompatible with healthy or plastic. But, if this be true, how can healthy lymph be thrown out, and granulations formed, in such numerous instances under its influence as we are constantly in the habit of observing? It is more probable that the specific action of mercury changes the condition of the blood, and diminishes the quantity of fibrin and white corpuscles, as we find mercury most useful when the blood is buffed, and in serous and fibrinous inflammations, where effusions take place to a great extent.

Dr. Latham says, "my experience tells me that whenever the exocardial murmur has ceased early, salivation has first taken place." And, in the relation of the events of the ninety cases, there were *two* in which he could not produce the specific action of mercury. These two died, and only one more. In another place, he says, "not in a single instance did the exocardial murmur cease to be audible until salivation appeared."

Again he says, "In English practice mercury is given from first to last, but it is for a time as if it were not given at all, for it produces no sensible effect. Common antiphlogistic remedies, however, are able again and again to mitigate and subdue symptoms: and so, at the end of a week or ten days, the patients are still alive, yet they are ready to die; but, in a great majority of cases, they do not die. Salivation arrives late, and seems to save them!!"

Colchicum, tartarized antimony, and aconite ought to be mentioned as remedies which occasionally very much allay the excessive action of the nervous and vascular system. They require caution and judgment in administration, perhaps more so than those before mentioned.

In my own practice I have been in the habit of treating these cases by general bleeding to a certain extent, followed by cupping, leeches, and blisters; but I have placed my chief dependence upon well-regulated doses of calomel and opium, and frequent frictions with strong mercurial ointment, until ptyalism is produced.

ART. 24.—*On the Causes of Cyanosis.* By NORMAN CHEVERS, M.D.

(*Medical Gazette*, March, 1847.)

[The following extract from an elaborate essay by the author upon the Morbid Conditions of the Pulmonary Artery, is taken as being particularly worthy of attention.

The paroxysms of suffocative dyspnoea, the lividity of the surface, and all the other distressing symptoms which constitute the leading features of cyanosis, were formerly attributed solely to the admixture of venous with arterial blood through the abnormal cardiac apertures which are usually discovered in these

cases, and to the consequent diffusion of a dark and vitiated fluid through every part of the arterial system; but this opinion has been in great measure abandoned since the facts have been established that the symptoms in question may be present in cases where no abnormal communication whatever exists between the cavities of the heart, as well as in instances where it is utterly impossible that the smallest quantity of venous blood could have entered the arterial system; while, on the other hand, the symptoms of morbus cæruleus are not by any means necessary attendants either of patency of the cardiac septa or of permanence of the arterial duct.

The opinion at present adopted by many pathologists with regard to the cause of the symptoms of morbus cæruleus is, that they depend entirely upon delay to the passage of the blood through the lungs, resulting from the presence of a fixed impediment to the circulation.

Morgagni appears to have been the first writer who attributed the intense lividity of cyanosis to obstruction in the trunk of the pulmonary artery. Louis ascribed this symptom to some obstacle to the circulation of the blood through the veins; and MM. Bertin and Bérard coincide in believing that the blue appearance of the surface in those affected with abnormal apertures in the cardiac septa depends on the stasis of the blood in the right cavities of the heart, and upon the consequent difficulty with which the venous blood circulates; and though it be complicated almost always with the mixture of the two kinds of blood, still it is not produced by this mixture. The opinion that cyanosis is exclusively due to the circulation of venous blood through the arterial system has been satisfactorily disproved by Dr. Stillé, who adduces ample evidence in proof of the conclusions: 1. That cyanosis may exist without admixture of the blood. 2. That there is not always a proportion between cyanosis and the degree in which the blood is mixed. 3. That complete admixture of the blood may take place without cyanosis; and 4, that cyanosis depends upon congestion of the general venous system from obstruction in the right side of the heart or in the pulmonary artery, impeding the return of its blood to the lungs.

The results of Dr. Chevers' investigations are almost entirely confirmatory of Dr. Stillé's inferences. Cases of cyanosis will very rarely occur in which the morbid anatomist will fail to discover some organic cause which acts virtually as an impediment to the pulmonary circulation. Dr. Stillé has, perhaps, referred somewhat too exclusively to the right side of the heart and the pulmonary artery as the seats of the mechanical obstacle to the circulation in these cases, for it will occasionally, though rarely, be found that the physical impediment to the circulation exists in the pulmonary tissue, or is even external to the lungs, as in Dr. Marcet's well-known case; and, in some few instances, the cause of obstruction is situated either in the left heart or in the aorta. Still, in every case of cyanosis, there will be found to exist some cause or other which tends essentially to prevent the free and complete circulation of the blood through the lungs, to retard its passage through the venous system, and, consequently, to render the process of its arterialization slow and incomplete.

Dr. Stillé has also argued that obstruction to the pulmonary artery is never found without the concurrence of cyanosis. This is considered by the author to be perfectly true as regards most of the cases of congenital narrowing of this vessel, but it does not hold good in all; for instance, where congenital imperfection of the pulmonary valves does not become seriously obstructive until late in life, the symptoms which it produces are not necessarily those of cyanosis; and he cites an instance in which extreme narrowing of the pulmonary orifice, the result of endocarditis occurring at the adult period, was not attended with the slightest appearance of lividity of the surface; in fact, it appears that, for the complete establishment of that generally dilated condition of the entire venous system which attends cyanosis, the obstruction to the circulation must have been present either at or before birth, when the capillary vessels are naturally more capacious than they are in the adult, or it must become confirmed previously to the full development of the body, while the entire vascular system is pliant and dilatable, and is still capable of readily adapting itself to permanent changes in the circulation.

It is, of course, well known that various kinds of obstructive disease of the heart and lungs, occurring in adult life, are liable to produce extreme internal



venous congestion, and considerable lividity of the surface; but the author is not acquainted with any instance in which an impediment of this kind, coming into operation subsequently to the age of twenty-five years, has produced that general and intense blueness of the entire surface which forms the characteristic feature of true cyanosis, depending upon congenital malformation of the heart.

In extreme cases of original defect of the cardiac apparatus, such as those in which the ascending pulmonary trunk is obliterated or absent, the cyanosis appears to be due less to the circuitousness of the course by which the lungs are supplied with blood, than to the unnatural narrowness of the pulmonary vessels, which are almost invariably far less capacious than in the ordinary condition; hence the pulmonary veins and left auricle are usually more or less contracted in these cases, while the lungs are either badly developed and imperfectly expanded, or present the evidences of chronic impediment in the dilated condition of their tubes.

There are still a few pathologists who adhere to the old opinion that cyanosis mainly depends upon the circulation of carbonized blood through the arterial system, insisting upon the fact that, in the great majority of cases of morbus cæruleus, the septa of the heart are more or less deficient. As Dr. Chevers has already stated, it is now established that cyanosis may exist quite independently of imperfection of the cardiac partitions, or of admixture of the venous and arterial blood; still, he apprehends that M. Bérard and Dr. Stillé have argued somewhat too exclusively in maintaining that admixture of the two currents has no influence whatever in producing cyanosis, as it appears to him by no means unreasonable to conclude that, in extreme cases of this kind, where the impediment to the pulmonary circulation is great, and where a large quantity of venous blood evidently passes into the aorta at every systole of the ventricles, the discoloration of the surface, and especially the lividity of the mucous membranes, which is so frequently observed in these cases, is, in part, at least, due to the dark hue and impure condition of the arterial blood. Admitting this, it must be borne in mind that the principal reason why cyanosis is generally present in cases of extensive communication between the cavities of the heart, will be found in the fact that a cause of obstruction which is capable of preventing the natural closure of the septa will rarely fail to occasion permanent and severe impediment to the circulation. Where an abnormal opening is discovered in the cardiac apparatus of one who has only lately become cyanosed, or where such an aperture presents traces of recent enlargement, it must not be at once concluded that the presence or augmentation of this communication has occasioned cyanosis; but the first cause of the disease must be sought for, and this will generally be discovered in the form of some manifest impediment to the circulation, which has determined the patency of the opening from birth, and which, having become recently aggravated, has produced the cyanosis at the same time that it has increased the size of the abnormal foramen.

Dr. Meigs adheres to the doctrine that persistence of the foramen ovale is the cause of cyanosis in infants. He observes, that, "as the occlusion of the foramen ovale is prevented by the torrent of blood flowing from the inferior vena cava, raising and keeping raised the interauricular valve, which is thin and floating, it occurred to him to place the cyanosed child on the *right* side, with the head and trunk somewhat raised, so that the interauricular septum should be maintained horizontal, and the blood contained in the left auricle should press with its whole weight on the closed valve. He has frequently seen the blue colour disappear at the very instant the infant was placed in this position, proving that the oxygenating blood only entered the arteries." Dr. Meigs adds, that he has thus saved the lives of fifty or sixty children in a hundred; whereas, as is well known, all the other means hitherto tried have failed.

Successful as this application of Dr. Meigs' theory has evidently proved, it is certain, according to the author, that his explanation of the fact is by no means demonstrative. So far from patency of the foramen ovale being an essential concomitant of the blue disease, it is well known that, in a very considerable proportion of instances of cyanosis, the auricular septum is perfectly closed; and two cases are upon record in which cyanosis was distinctly attributable to closure *ante partum* of the foramen of Botal. Wherever this communication remains too long open in a child, there must exist some cause, either of obstruction to the circula-

tion, or of over-distension of the heart, to prevent its closure; and it is to that cause, and not simply to the patency of the auricular septum, that the cyanosis is due; otherwise it is clear that every infant would remain cyanosed until the termination of the usual period at which the foramen becomes naturally closed, and every individual whose auricular septum remained imperfect would be the subject of *morbus cæruleus*,—neither of which circumstances is found to obtain. The position of the body recommended by Dr. Meigs is, however, well calculated to relieve those paroxysms from which the subjects of congenital heart disease suffer, as it places nearly the whole of the voluntary muscles in a state of relaxation, thereby rendering the circulation through the extreme vessels as free as possible, and (what is of still more importance) as it facilitates the supply of arterial blood to the lungs and to the brain.

Much unnecessary discussion has been expended upon the question, whether, in cases of septal deficiency, admixture of the venous with the arterial blood occurs constantly, or only as the result of occasional causes of impediment to the pulmonary or systemic circulation. In by far the larger proportion of instances of extensive congenital malformation of the heart, and certainly in all those cases where direct communication between the cavities or arteries exists as the result of a permanently obstructed state of any of the cardiac orifices or vessels, admixture of the two currents of blood is a matter of necessary occurrence—the sole means by which the circulation is maintained at all, and here the state of the parts shows at a glance in which direction the diverted current has been accustomed to pass. Thus, in cases of transposition of the aorta and pulmonary artery, where the ventricular septum and foramen ovale remain pervious, it is evident that blood must be continually passing directly from the right to the left ventricle, and from the left to the right auricle. In other instances, where the orifice of the pulmonary artery is closed, and the aorta arises from the right ventricle, it is apparent that the contents of the left cavities can only reach the aorta by passing from left to right through the aperture in the septum, which is always provided in these cases. So, also, in the majority of instances where the foramen ovale remains open, but protected by an efficient valve, it is clear that blood has traversed the aperture only from right to left. But in many cases of congenital malformation of the left cavities of the heart, it is evident that the current through the foramen has always been from left to right. In cases of patency of the ductus arteriosus, associated with contraction of the pulmonary orifice, the lungs, of course, receive some portion of their supply of blood through the duct from the aorta; but, where there exists a contracted or obliterated state of the aorta below the origin of the left subclavian, it not unfrequently happens that a considerable stream of blood is regularly conveyed by the duct from the pulmonary artery into the aorta. In the larger proportion of these cases it is impossible that the direction of the current should be permanently reversed; the foramen ovale is generally defended on one side by a more or less efficient valvular apparatus, and an analogous arrangement has occasionally been developed in patency of the ventricular septum and arterial duct.

It has been argued by M. Cloquet and Dr. Willis, that when the right and left cavities of the heart are of equal and proportionate strength, no admixture of the arterial and venous blood will occur during their contractions, even although there may exist free communication between the vessels, or through the septa. A few cases have been observed which go far to substantiate the general correctness of this doctrine; but the instances of extensive malformation of the heart are so few in which the two sets of cavities are exactly proportioned to each other, or in which the whole of the cardiac outlets are perfectly free from obstruction, that the role is by no means one that admits of being either extensively or frequently applied.

It is now allowed by the majority of pathologists that, in itself, patency of the foramen ovale (where the opening, although free, is guarded by an efficient valve) is by no means necessarily attended with cyanosis; and it is probable that, where this exists as the principal defect in the cardiac apparatus, the passage of blood through the aperture is ordinarily by no means large, and that the transit of a full stream from one auricle to the other may be merely an occasional occurrence for the purpose of relieving distension under circumstances of accidental engorge-



ment or obstruction. Still it is doubtful whether we can fully admit the opinion of Bichat and Louis, that, "in examples of septal deficiency, or at least in cases of open foramen ovale, no admixture of venous with arterial blood occurs except under circumstances of obstruction;" for, as we have already seen, these deficiencies are seldom, if ever, present where there is not also discoverable some cause of permanent impediment to the circulation, which probably at all times occasions a certain degree of comminglement of the currents, although that mixture may not be sufficient to produce serious vitiation of the arterial blood. It is generally found that, when the subjects of the minor degrees of septal deficiency become affected either with pulmonary disease, or with any causes of delay to the systemic circulation, the dyspnoea and lividity of the countenance are greater, and the consummation of the fatal issue is usually more rapid than might have been expected from the extent of the recent pulmonary disease, or from the severity of the other superadded causes of obstruction, had these existed alone.—facts which go far to corroborate the belief that, in cases of permanence of the septal openings, there generally exists some fixed impediment to the circulation, although that impediment may not be sufficient to produce any visible ill consequences while the heart is tranquil, and the lungs remain free from congestion or other superadded lesion.

It is a demonstrable fact that there may constantly occur considerable commixture of venous with arterial blood, and yet the individuals may be well nourished and active, and may arrive at maturity without ordinarily presenting sufficient blueness of the surface to attract the attention even of a medical man.

In other instances of this kind the patients may continue for many years to enjoy tolerable health, being only occasionally liable to more or less lividity of the surface, either with or without a certain amount of dyspnoea, occurring in consequence of extraordinary exertion, repletion, or transient causes of pulmonary obstruction. Here the intensity of the cyanosis can never be taken as an indication of the degree of abnormal communication which exists between the cavities of the heart. Louis has very justly remarked, that "the change of colour is never found to be in proportion to the freedom of the communication;" for it is of course evident that, wherever obstruction of the outlets exists, the more freely the cavities communicate the less will the circulation be impeded.

In either of the above sets of cases the symptoms of *morbus cæruleus* may become permanently developed in their greatest intensity whenever additional and permanent obstruction occurs to the passage of the blood through the lungs, or immediately the muscular power of the heart becomes seriously impaired. Instances of considerable malformation of the heart occasionally occur in which cyanosis does not appear until the age of puberty, and others have been observed where the lividity of the surface, which had occasionally presented itself from birth, did not become permanent until a rather advanced period of life. In the former of this class of instances the increased impediment is probably due to a want of that development of the pulmonary apparatus which usually takes place at the approach of adult age; in the others it may be traced to additional narrowing or other consequences of acquired disease in the malformed structures, causes which are probably further aggravated by plethora, and by a certain amount of deterioration of the lungs.

Allusion has been already made to the influence of contraction of the foramen ovale and arterial duct in producing the first symptoms of *morbus cæruleus* in children who are the subjects of congenital cardiac defect; it does not usually appear that such defect necessarily interferes with the health of the infant so long as its system is freely supplied with placental blood; but so soon as respiration and the organic changes which accompany the commencement of that process become established, the malformed heart fails to perform with facility functions for which its structure very imperfectly adapts it, and the evidences of severe obstruction are quickly developed; these are, in all probability, also aggravated by the increased bulk of the fluids which is produced when the process of assimilation commences. The opinion advanced by M. Billard, that a perfectly oxygenated blood is not necessary to the new-born *fœtus*, taken in conjunction with the fact, that the infant's body has usually a slightly livid appearance until the funis is secured and respiration is fully established, has been regarded as a sufficient explanation



of the circumstance that several hours or days frequently elapse after birth before the symptoms of the blue disease present themselves in those children whose hearts are structurally imperfect. The author is not, however, aware of any fact which proves that the blood supplied to the fœtus during intra-uterine life is less completely oxygenized than that which circulates through the arteries of the mother; and it is evident that the slight discoloration of the surface alluded to above is merely the transient result of the embarrassment and delay which the circulation necessarily sustains at the time when the infant is gasping in its first efforts to inspire.

**ART 25.—*Sulphate of Quinine in Aneurism of the Aorta, and in other Internal Aneurisms.***—It appears that sulphate of quinine has been employed with much success in some Italian hospitals for the relief of aneurism of the aorta and other internal aneurisms. It belongs, in this use of it, to what are termed hyposthenics (subduing action), and is to be carried as far as the system will bear it. It has, say its Italian supporters, the immense advantage of bringing down the pulse without disturbing its rhythm, of making the buffy coat of the blood disappear, that is, of dissipating the organic condition,—namely, arteritis, on which it depends, and thus of retarding the progress of the aneurismal tumour. The other hyposthenics adapted to the same end, according to the same authorities, as by alternation with the sulphate of quinine, are the vegetable and mineral acids, the sulphate of iron, the ergot of rye, the cold ferruginous waters, the arsenious acid, the acetate of lead, and the iodide of potassium.

*Monthly Journal, July 1847.*

**ART. 26.—*On Abdominal Pulsation.*** By EDWARD CRISP, Esq., F.R.C.S.E.

[The following remarks are extracted from chapter vii. of Mr. Crisp's recent publication on the "Diseases and Injuries of the Blood-vessels."]

Although inordinate pulsation of the aorta has been described by some authors as one of the symptoms of inflammation of that vessel, we have abundant evidence that it may arise from other causes.

Dr. Baillie (Transact. College of Physicians, vol. iv.) was the first to direct the attention of the profession in this country to epigastric pulsation; and he relates a case of twenty-five years' standing, which had been mistaken by two eminent surgeons for aneurism. Laennec and others have recorded similar cases.

These cases may be conveniently divided into three kinds. First, those depending upon constitutional causes, such as chlorosis, hysteria, anemia from loss of blood, &c.; in short, any state of system inducing an impoverished condition of the circulating fluid, or derangement of the nervous functions. A very instructive example of the occurrence of this affection from loss of blood is related by Bowman (Lancet, 1843): "A young man, æt. 22, was bled largely and repeatedly for supposed cramp in the stomach; this was followed by pulsation of the abdominal aorta, of so violent a character as to shake the bed, and cause a heaving of the bedclothes; the palpitation extended from about one inch above to three inches below the umbilicus; it was sometimes stronger than at others, and increased on motion." The case was considered by his first medical attendant as aneurism of the abdominal aorta, and he was treated on Valsalva's plan with aggravation of the symptoms; he was then put upon a more generous diet, iron and light bitters were exhibited, and his health speedily improved.

In the second variety, mechanical obstruction appears to be the chief cause of the pulsation. The most frequent of these causes are tumours of various kinds pressing upon the vessel, such as enlarged pancreas or spleen, scirrhus stomach, diseased mesenteric glands, and collections of air and scybalous matter in the bowels. Allan Burns, in addition to these, mentions solidification of the lower lobes of the lungs, dilated heart, and enlarged vena cava.

In the last and most frequent form, the aorta appears to be sympathetically affected. Dr. Baillie supposed that it depended upon a disordered state of the digestive organs, and that it occurs most frequently in the male sex. This latter opinion I believe to be erroneous.

Dr. Fausset (Dublin Journal, vol. xi.) supposes that it generally depends upon

chronic inflammation of the stomach, and Dr. Stokes says that "we have from enteritis and peritonitis a throbbing of the abdominal aorta perfectly analogous to the morbid action of the radial artery in whitlow." Although I am disposed to agree with these authorities that stomach or intestinal affection is generally the exciting cause of the malady, I believe it can only take place when the parietes of the vessel are weakened; thus probably depending upon structural defect or deranged nervous influence. It is difficult to imagine that local pulsation can arise from nervous excitability alone, or that the upper part of the vessel can be morbidly excited without the lower part being in a similar state. If functional or structural disorder of the stomach alone would produce inordinate pulsation in a healthy artery, these cases, instead of being rare, would be common.

*Diagnosis.*—When the large arteries generally are the seat of inordinate pulsation, as in the first class of cases, the diagnosis is less difficult than in those instances where the vessel is mechanically or sympathetically affected. When the pulsation is limited to a small portion of the arterial tube, the diagnosis becomes more difficult, and the disorder is more likely to be considered aneurismal; but a careful investigation of the symptoms will, in most cases, lead to the formation of a correct opinion.

Aneurism is often preceded by some injury to the abdomen, and is mostly accompanied by pains of an aching or tearing character; a bruit is usually heard, and the tumour, if large, can generally be felt externally. The sex and previous history of the patient will also assist us in determining the nature of the affection; thus, if the patient be a female, the chances will be much against the existence of aneurism. In fifty-nine cases of aneurisms of the abdominal aorta, eight only were females.

*Treatment.*—In the constitutional form, where the blood is deficient in fibrin (globules?), and the heart and arterial tunics partake of the want of tone which pervades the whole system, our object must be to improve the general health by a course of tonic and alterative medicines; the preparations of iron combined with occasional aloetic purgatives will be most beneficial. If the patient be a female, especial attention must be paid to the uterine functions. Placing the patient upon low diet, and thoroughly emptying the bowels will greatly assist the diagnosis.

When there is reason to suspect chronic inflammation of the stomach, the plan recommended by Dr. Fausset, namely, spare diet, local bleeding, and counter-irritation over the stomach, with small doses of blue pill and James's powders will probably be most successful. (pp. 94-8.)

## SECT. V.—DISEASES OF THE CHYLOPOIETIC SYSTEM.

ART. 27.—*Symptoms and Treatment of Chronic Ulcer of the Stomach.* By Dr. BUDD.

(*Medical Gazette*, June 25, 1847.)

[We extract the subjoined remarks on the symptomatology and treatment of this insidious and fatal disease from the Croonian lectures of the present year.]

In its early stages the symptoms are few and equivocal. Pain and soreness at the stomach after meals, occasional acid eructations, and occasional vomiting, which are often the only symptoms then present, may result from various other causes, and even from mere functional disorder.

After these symptoms have lasted some weeks or months their very continuance becomes significant; it leads us to conclude that they depend on organic disease, while the seat of the pain, and the circumstance that it is always increased by eating, and usually abates as the stomach gets empty, lead us to infer, in the absence of any direct evidence of disease in the liver or any other organ, that the disease is in the stomach. After a time these symptoms are often succeeded by vomiting of blood in large quantity. When this has happened, the detection of the disease becomes easier. Vomiting of blood may, indeed, result from various other causes, but these may, generally, be distinguished by the circumstances under which they occur.

1st. It may result from a general tendency to hemorrhage, in consequence of a

faulty condition of the blood, as in scurvy and purpura; but in such cases the bleeding is not confined to the stomach, but issues from other mucous surfaces, and appears on the skin as purpuric spots.

2d. Again, vomiting of blood may result from mechanical congestion of the stomach, in consequence of some impediment to the free passage of the blood through the liver or the chest. In such cases the quantity of blood lost is small, and its cause is, in general, obvious from other symptoms which mark an impediment to the flow of blood through the liver or thoracic organs.

3d. Vomiting of blood sometimes occurs without organic disease of the stomach in persons who, in consequence of repeated attacks of ague, have great enlargement of the spleen. Here, also, the previous history of the patient, his cachectic condition, and the palpable enlargement of the spleen readily lead us to the cause of the hemorrhage.

4th. Lastly, the hemorrhage may be vicarious of the catamenia; and this is especially liable to happen in young females—the class of persons supposed to be most subject to ulcer of the stomach. But in such cases the hemorrhage usually occurs at the monthly period, and the natural discharge is found to be suppressed.

When vomiting of blood does not depend upon any of the above conditions, it results almost invariably (except in malignant fevers) from organic disease of the stomach itself. When, therefore, profuse vomiting of blood occurs in a person who exhibits no tendency to hemorrhage, who has no disease of the abdominal or thoracic viscera which can impede the passage of the blood, and the hemorrhage cannot be referred to disordered menstruation, we are driven to ascribe it to lesion of the stomach itself. When such is the case, and when, moreover, the vomiting of blood has been preceded for some weeks or months by pain and soreness at the stomach, always increased by meals, hardly a doubt remains of the existence of disease of the stomach. But in persons under 30, the only disease of the stomach, with few exceptions, which gives rise to hemorrhage is chronic ulcer.

In persons above that age, vomiting of blood, likewise, preceded by painful digestion, may likewise occur from cancer of the stomach. In persons of that age, therefore, the question will be—is the organic disease of the stomach, which we have inferred to exist, cancer or chronic ulcer? When the disease has existed some months, it will, in most cases, be easy to answer this question.

Cancer in most cases originates at the pyloric or cardiac orifice, and obstructs it; it also gives rise to a tumour, which, at the end of some months, is generally palpable enough; it *always* interferes greatly with nutrition, causing progressive wasting. Simple ulcer seldom produces any of these effects. We are thus led to the conclusion, that there is chronic disease of the stomach of such a kind as to cause hemorrhage; that the disease involves only a small portion of the stomach; that it does not obstruct the orifices; and that it does not form a perceptible tumour. The probability in such a case is very great that the disease is simple ulcer, and not cancer. The probability is greater the longer the previous duration of the disease. A simple ulcer may continue almost stationary for twenty years. Cancerous disease, on the contrary, steadily progresses, and the symptoms become week by week more marked, and the patient dies emaciated within a year, or two years at the farthest. If then the disease has lasted this length of time, and there is no great wasting, no tumour, or sign of obstruction of the orifices, hardly a doubt remains that it is simple ulcer of the stomach.

[Respecting the treatment of this form of disease Dr. Budd observes:]

We have seen that there are several circumstances which impede the healing of this ulcer, such as the frequent changes of volume to which the stomach is subject, the writhing movements which are constantly going on while the stomach is in action, the mass of crude substances which are constantly put into it, and the irritating effects of the gastric juice. It is by lessening as much as possible the unfavourable influence of the circumstances that we best promote the recovery of the patient. This is principally done by a regulation of the diet. The patient should prevent the ill effects of distension by eating little at a time, and of food of the mildest kind. Milk, or milk and bread are the articles most suitable, as causing least pain. The good effects of such management are soon perceptible; after



a few days the pain at the stomach has generally much abated, and the sickness has ceased. Sometimes the amendment is progressive, and, if the plan be persevered in, the ulcer heals, and the patient recovers. In other cases the pain and soreness, though much lessened, continue to be felt, and if the ulcer heal at all, it is only after the lapse of many months.

Medicines are of comparatively little efficacy. Where there are sour eructations, or where the vomited matters are sour, fifteen grains of bicarbonate of potash, and three or four grains of nitre, two or three times a day, lessen the pain at the stomach, and are, therefore, it is fair to presume, productive of benefit. In other cases they appear to do harm. The best evidence we can have of the good or ill effects of particular kinds of food is their assuaging or increasing the pain.

When there has been vomiting of blood, and the patient is much blanched, a few grains of citrate of iron may be often given with advantage, as soon as under the influence of strict diet a little solid food can be borne.

I have often tried opium, and hydrocyanic acid, and nitrate of silver, with the object of lessening the pain and healing the ulcer, but never could persuade myself of benefit derived from them.

If vomiting of blood should come on from ulcer of the stomach, the means most likely to restrain it are ice, swallowed in small quantity, rest, *prolonged fasting*, alum, and other astringents.

[In a former part of the lecture, Dr. Budd enters fully into the mode in which chronic ulcer generally proves fatal, viz. by perforation. For the course of treatment to be followed, when this event has taken place, we cannot do better than refer our readers to a case reported by Dr. Marshall Hughes, which, to our mind, exhibits the most rational mode of managing these unfortunate cases. It may be found in "Abstract," Vol. IV. p. 57.]

ART. 28.—*Treatment of the Gastric Irritation of Phthisis.*—[Dr. Budd states, in the same valuable course of lectures, that he believes the peculiar irritability of the stomach which is frequently observed in phthisical cases to be associated with an increased secretion of gastric fluid in an empty stomach. Under this impression he considers—]

The most efficient remedy is liquor potassæ, or some other alkali, which neutralizes the gastric acid, and thus renders the fluid inert. Fifteen drops of the liquor potassæ, or twenty grains of the bicarbonate of potash three times a day, hardly ever fail to stop the nausea or to mitigate the pain. The pain may likewise be stopped in the majority of cases by vegetable astringents. The mildest and most efficient is the infusion of logwood, in doses of  $\mathfrak{z}\text{j}$  three times a day.

*Medical Gazette*, June 4, 1847.

ART. 29.—*Abscess of the Liver treated by Puncture.*—The following case, reported in the "Medical Times" by Dr. Clay, is sufficiently rare in this country to deserve further publicity. The patient complained of fixed pain in the right superior portion of the umbilical region, for which he was treated antiphlogistically without relief. His bowels were constipated, countenance yellow, spirits depressed, anorexia, pulse 90, evident enlargement of the liver, with paucity of bile. He took ox-gall,  $\mathfrak{z}\text{ij}$ , calomel gr. x, divided into twenty-two pills, of which one three times a day was the dose. Under this plan he quickly improved, and remained well until after bathing, when the fixed pain returned. Being at this time in a different locality, he was again treated by bleeding, &c., and, as before without benefit. He then took the ox-gall and calomel, and a second time became greatly relieved. Dr. Clay lost sight of him from this time, but it appears that while in Dublin he suffered a severe relapse, with pain in the old spot, which had become more tense and permanent. At this spot Dr. Clay passed a grooved needle, and, as it gave issue to a drop of pus, he tapped it freely with a trocar, and drew off four pounds of fetid pus. At each dressing, for several days, a pound of pus escaped, but after that time the discharge gradually diminished, and at the end of three months the man was completely recovered. Dr. Clay calculated that in all, at least sixteen pints of matter must have been discharged. The treatment after the evacuation of the abscess was tonic and alterative, the functions of the liver being restored by the ox-gall and calomel.

*Prov. Journ.*, Aug. 25.

ART. 30.—*The most common Causes of Intestinal Obstruction.*—A summary of the most frequent causes of obstruction of the bowels is given as below by Mr. Crisp. The causes which may give rise to constipation or intestinal obstruction may be either nervous or mechanical. Amongst the former may be enumerated apoplexy, and other conditions of the brain and nervous system, which appear, in a great measure, to paralyze the muscular fibres of the intestines. The same effect may be produced by lead and other deleterious substances introduced into the system. Spasm and irregular contraction of the muscular fibres may also occasion obstruction. The above causes, although often very obstinate, may be generally overcome by appropriate treatment.

The second class of causes, namely, the mechanical, are more likely to occasion permanent obstruction of the canal, and hence lead to fatal consequences. These obstructions may be again conveniently divided into those occurring within the tube, and those produced by pressure from without. Amongst the former, the following are the most frequent:

- 1st. Impacted scybalæ.
- 2d. Extraneous bodies introduced by the mouth or anus.
- 3d. Biliary or intestinal calculi.
- 4th. Malignant or simple ulceration, producing thickening and contraction of the tube.
- 5th. Contraction and thickening of the canal without ulceration.
- 6th. Intussusception or invagination of a portion of the intestines, so as to render the canal impervious.
- 7th. Scirrhus thickening and malignant growths of the mucous or submucous tissues.

8th. Congenital contraction and occlusion occurring at all parts of the canal.

9th. Fibrous tumours of the muscular or submucous tissues.

The causes acting from without are—

- 1st. Tumours of various kinds pressing upon the bowel.
- 2d. The escape of the intestine or omentum from its proper cavity through the abdominal parietes and other parts, constituting what is called hernia.
- 3d. The presence of adventitious bands, which so begirt and constrict the bowel as to produce strangulation, or the passage of a portion of intestine through the mesentery, mesocolon, or omentum.

4th. The gluing together of the convolutions of the intestines by coagulable lymph (the result of acute and chronic inflammation), so as to interfere with their peristaltic motion.

5th. The twisting of the intestine, as in a patient who recently died under my care, from a large umbilical hernia (and who was seen by Mr. Cock). The cause of obstruction appeared to be a twisted state of the bowel, and not, as we supposed, from ordinary strangulation.

6th. Abscess occurring in the walls of the intestine, or in the adjoining parts.

*Lancet*, May 29, 1847.

ART. 31.—*On the Internal Use of Nitrate of Silver in Obstinate Diarrhœa and Dysentery.* By THOMAS AIKIN, Esq.

(*Dublin Med. Press*, Sept. 29, 1847.)

The author of this communication remarks, that the topical application of the nitrate of silver to inflamed or ulcerated mucous surfaces is confessedly a most efficient mode of treating such cases. The knowledge of this fact may have induced physicians to employ the same remedy internally against disease invading the mucous surface of the hollow viscera. Accordingly, we find that ample testimony is afforded to the efficacy of the nitrate of silver in certain morbid conditions of the mucous coat of the stomach; but no English writer, Copland excepted (*Dictionary of Medicine*), sanctions its employment as a therapeutic agent in morbid conditions of the mucous surface of the intestinal tube. The author's object in the present communication is to adduce such testimony in favour of its sanative power in these affections as may stimulate further inquiry into the action of this salt in certain obstinate forms of diarrhœa and dysentery, which occasionally resist the action of the most esteemed remedies wielded in the ablest manner.

Boudin (Gazette Méd. No. 51, 1836), physician to the Military Hospital at Marseilles, treated fifty cases of typhoid fever (dothinenenteritis), in most of which severe diarrhœa was the most prominent feature, with the nitrate of silver thus: When the lower portion of the intestinal tract was presumed to be the seat of ulceration, enemata, containing from one to three grains, dissolved in distilled water, were administered. In most cases one enema sufficed, the symptoms undergoing speedy amelioration. In other cases the remedy was given by the mouth, in half-grain doses every half hour, [?] formed into pills with gum tragacanth, or starch, until from two to four grains were thus taken. In some instances these two modes of treatment were combined; the results were that only two of the fifty cases succumbed. Examination showed "many ulcers" on the mucous membrane in a case of incipient cicatrization—"en voie de cicatrization." There was evidence of the solution administered per rectum having passed the ileo-cæcal valve, and producing effects on the lower portion of the ileum precisely similar to those resulting from its action on the surface of the colon.

Kalt confirms Boudin's statement, having treated twenty-two cases of dothinenenteritis with the nitrate of silver. Of these one died. He gave it in mixture (grs. ij to vj in decoct. salep. oz. vj); a tablespoonful of which was taken every half hour, or hour, according to circumstances.

Hirsch of Königsberg (Hufeland's Journal) found the nitrate of silver to succeed in obstinate cases of diarrhœa on the failure of ordinary remedies. It proved specially useful in the diarrhœa of newly-weaned infants. In the advanced stage of such cases, when emaciation was extreme, the dejections being frequent, fetid, and consisting of a variously coloured, sometimes greenish, or bloody mucus, and wanting altogether the fecal character. When aphthous ulceration pervaded the mouth, and when prostration was extreme, the action of the nitrate was brilliant." He gave it to children thus:—

R Argent. nitrat. crystall.	gr. ½	
Aquæ destill.	℥ij	
Gum mimosæ,	℥ij	
Sacch. albi,	℥ij	Misce. Ft. mist.

A teaspoonful of this mixture was given every two hours, and an enema, containing a quarter grain of the salt, with mucilage and a little opium, was administered. The good effects of this treatment were occasionally visible in a few hours, sometimes not until the second day. He pronounces it a specific in the diarrhœa of infants. He found it almost equally efficacious in severe forms of diarrhœa and dysentery occurring in adults. He administered it to the latter in pills, in doses varying from one-twelfth to one-twentieth of a grain every two hours. For this purpose he recommends liquorice powder as preferable to the vegetable extracts which affect its decomposition. He also gave enemata, containing half a grain or a grain, with mucilage and opium.

Canstatt also extols the nitrate of silver as prescribed by Hirsch in the diarrhœa ablactatorum.

Since the author became acquainted with Hirsch's observations, opportunity presented for testing the powers of the nitrate of silver in a severe case of diarrhœa occurring in a child of a year old. Vomiting and purging set in, and continued with almost unabated intensity for five days. The stomach at length retained fluids in small quantities, but the purging continued. Chalk mixture, kino, opium, and acetate of lead were tried, and all, with the exception of the last, seemed to increase the irritation. The dejections were frequent greenish, sometimes bloody, and very fetid. On the sixth day prostration was very great; there was a tendency to stupor, and quantities of greenish mucus were voided. Under these circumstances he gave the mixture as prescribed by Hirsch. The first dose seemed to increase the discharges; however, in about six hours, the character of the dejections were improved, they became feculent, and every symptom underwent a corresponding improvement.

Should the foregoing observations induce practitioners in this country to subject the action of the nitrate of silver in diseases of the mucous surface of the intestines to a more extensive trial, they may arrive at results confirmatory of those already obtained by the authorities which the author has quoted, and thereby extend the



application of an agent of great therapeutic energy to forms of disease occasionally so intractable as to baffle the powers of ordinary remedies.

[The advantage of the nitrate of silver in the diarrhœa of infants, of which we have had considerable experience, is also acknowledged by Bouchart (*Manuel Pratique des Nouveau-nés*) and by Trousseau. We have given it frequently, and with much benefit also, in the "irritable" bowels of the adult. We generally prefer to exhibit it in solution, more especially in children, since, if given in pill or powder, we have no guarantee that it will not, by suddenly dissolving, exert all its effects, which, in that case, may be too powerful, upon a circumscribed portion of the mucous membrane. This is a point which is not sufficiently attended to in prescribing the nitrate of silver for gastrodynia, and sufficiently accounts for the diversity of opinion respecting its benefit in this complaint. It may be readily conceived that it makes all the difference whether half a grain of solid nitrate of silver lies in a corner of the stomach and dissolves, or whether originally in solution its action is distributed throughout the entire irritable mucous membrane.]

ART. 32.—*Dr. Heberden's Treatment of Dysentery.*—[Dr. Ayres, after quoting the elegant Latin of the "Commentaries," in which the use of saline aperients in dysentery is strongly urged, remarks:—]

I have been in the habit of giving saline purgatives for the last seven or eight years, and, as I can safely affirm, without a single unfavourable or untoward result. To adults I have usually given a drachm of sulphate of magnesia, combined with a grain of ipecacuanha, in some simple aromatic water, every six hours; to children about half the quantity; and to infants a still smaller dose. I have observed that so soon as natural fecal dejections are produced, the bloody mucosities cease to be discharged, the tenesmus disappears, and the patient is cured. In by far the majority of cases the bowels have been properly relieved within twenty-four or thirty-six hours; but in a few cases of a more severe character the bowels have been more obstinate, and the saline purgatives have not produced their proper effect until after the lapse of three days. I have also, occasionally, observed the continuance of tenesmus after the proper action of the bowels; but this has been easily relieved by an opiate. The addition of small doses of ipecacuanha I have imagined to be beneficial, from the known efficacy of this substance in several intestinal diseases; but I should place my chief reliance on the saline purgative. In practice I direct the patient to continue the medicine until fecal motions have made their appearance, and then either to take the medicine less frequently, or altogether omit it, as, without this precaution, severe diarrhœa might be induced. Where this plan of treatment has been adopted, I have not seen a single case in which the disease became chronic.

*Medical Times*, Sept. 18, 1847.

ART. 33.—*Treatment of Obstinate Hiccough.*—Dr. Boyer relates three cases of obstinate hiccough, which, having resisted all the usual means employed for its relief, were relieved by prolonged compression of the epigastrium. A large pad is laid on the epigastrium, and bound forcibly down, by a bandage. It is usually necessary to wear it for twenty-four hours.

*Revue Méd.-Chirurg.*, July 1847.

## SECT. VI.—DISEASES OF UNCERTAIN OR VARIABLE SEAT.

ART. 34.—*On the Treatment of Diabetes Mellitus.* By Dr. REES.

(*Medical Gazette*, Aug. 27, 1847.)

Dr. Rees observes that we are mere empirics in the treatment of this disease; that, having no principles to guide us, our remedies are exhibited in accordance with the results of experience alone. We are not fully acquainted with the property which the stomach has lost, which enabled it in the healthy state to decompose sugar into oleaginous matters for the purpose of the economy, and we therefore are unable to restore that property. Nor do we know how to stop the ordinary

action of animal diastase after it has formed starch into dextrine, and to induce the change of this dextrine into fat instead of into sugar.

Among the remedies which are known to exert an influence over the diabetic condition, Dr. Rees first mentions opium as possessing the power of lessening the flow of urine in a marked degree, and tending to the production of moisture on the dry and indolent skin. It tends, also, to arrest the progress of waste, by lessening the quantity of solid as well as fluid matters exhaled, and, on this account, is to be regarded as a valuable adjunct to other remedies. In advanced stages of the disease, when there is a tendency to drowsiness, it must be exhibited with caution.

In those early cases in which we may hope to obtain benefit by the use of remedies, it is of the first importance to attend carefully to the state of the bowels. Constipation not only deranges the action of the chylopoietic viscera, but is almost certain to interfere with lacteal absorption.

When opium by itself fails to act upon the skin, the author advises the combination of antimony with it. A draught composed of  $\mathfrak{z}\text{ij}$  of liquor ammon. acet. and  $\mathfrak{m}\text{xx}$  of the vin. ant. potass. tart. three times a day, with opium in pill, is an excellent plan for obtaining action on the skin in recent cases. This may afterwards be kept up by baths and frictions. Magnesia combined with Dover's powder has also been seen by the author to be of much service, and he considers it superior to ammonia. He has also used the hydrochloric acid with temporary benefit.

As regards diet, Dr. Rees advises a certain restriction as to the use of saccharine and amylaceous principles, but considers that this restriction may be carried too far: from his own experience he is of opinion that the moderate use of starchy matters is not injurious. He encourages the use of bread rather than of farinaceous vegetables, not so much with the view of assisting in the cure of the disease, as for the purpose of obtaining a more prominent test from the examination of the urine, as to the progress made by remedies. Thus if food which produces but little sugar in diabetic urine be administered, we shall more easily obtain an entire exemption from sugar as our remedies proceed in the alleviation of the disease.

It is important to remember that a diet consisting of fatty matters tends much to assist in the nutrition and support of the patient during the exhibition of remedies. Butter may be given freely with this view.

The following diet is laid down by Dr. Rees as that most generally advantageous:

*Breakfast.*—Three quarters of a pint of cocoa, with from six to ten ounces of bread, and an ample supply of fresh butter.

*Dinner.*—Three quarters of a pound of meat weighed after cooking, twelve ounces of bread, four ounces of cabbage. Wine and brandy-and-water are preferable to malt liquors.

*Tea* without sugar, bread and butter.

*Supper.*—Bread and milk.

ART. 35.—*Treatment of Diabetes Mellitus.*—By CHARLES ELAM, M. B., Lond.—According to this writer, the first indication is to subdue the functionally excited state of the stomach and to restore the natural state of secretion. With this view he considers the topical abstraction of blood by leeches or other means to be an important agent. It is much to be preferred to general bleeding, as the latter reduces so materially the quantity of fibrin.

Counter-irritation is also an important agent in reducing this excited state, and has a doubly beneficial action, inasmuch as by the inflammation excited a slight increase of the fibrin of the blood is induced.

Of internal remedies opium is most effectual by quieting irritation, and causing secretion to take place more slowly and naturally. *Ipecacuanha* is often given in combination with opium, in the hopes of its acting upon the skin, but it generally fails in producing this effect.

Hot and vapour-baths are very important agents to restore the functions of the skin, not only as regards perspiration, but also with reference to those functions which may be considered complementary of respiration. To this end they must be used daily and perseveringly.

The author considers that the usual plan of limiting the fluid ingesta is a needless punishment, as the thirst is indicative of the requirements of the system in

order to carry off the saccharine matter. Exclusive diet is not advised, and he is an advocate for the use of gluten bread as recommended by Bouchardat.

*Medical Gazette*, Aug. 20, 1847.

ART. 36.—*Clinical Lecture on Gout attended with Albuminous Urine.* By Dr. TODD.

(*Medical Gazette*, June 18, 1846.)

[The case which gave rise to the following remarks was that of a female, æt. 40, of intemperate habits, the subject of rheumatic gout, with visceral disease of the heart, liver, and kidneys. The author, in alluding to the latter, took occasion to notice that he had met with a condition of the kidney which was peculiar to the gouty habit, and which he calls the gouty kidney; this condition is marked by the appearance of albumen in the urine, and is frequently, but erroneously, according to the author, attributed to Bright's disease. After alluding to the state of the urine, the author thus proceeds:]

What is the state of the kidney which produces this condition of urine? Some would answer, an advanced stage of Bright's disease. Such, however, is not the case, in my opinion; the history of the patient does not conform to the ordinary course of things in that disease. Her aspect is quite different from that in Bright's disease. On the other hand, her extreme gouty state of constitution led me to think that she had got a contracted and shrivelled state of kidney, in which a large portion of the organ appears to be wasted, and its structure apparently condensed, a condition which, while it may occur in other states of the system, is peculiarly apt to be developed in the inveterate gouty diathesis.

The first case of this kind which arrested my attention occurred five years ago. The patient had been a gentleman's butler, and had had several attacks of gout. He had a sallow, unhealthy look, and the only appearance of dropsy about him on his admission was a copious effusion into one knee-joint. His urine was sufficiently copious, quite clear, and pale, and contained a small portion of albumen. This patient died suddenly, and we found a copious effusion of fluid in one pleura, which must have taken place a few hours before death, and both kidneys were much contracted, shrunken, and granulated upon their surface, presenting all the characters of what has been termed the third stage of Bright's disease.

In reviewing the case of the subject of this lecture, it would appear that she has been the subject of chronic gout, or what some would call rheumatic gout, and that her joints, large and small, have all been damaged by the disease, that her heart is diseased, her liver and kidneys contracted. How strikingly do these consequences comport with the humoral view of the pathology of the disease. Not only are those parts which the morbid matter of gout is most prone to affect materially damaged, but likewise the emunctories through which the poison should make its escape out of the system—the liver and kidneys; these organs have become poisoned by the morbid matters which have escaped, or tried to make their escape, from the systems through them, and therefore it is natural to expect a change in their nutrition.

[The post-mortem appearances of this case consisted of hypertrophy and dilatation of the heart, with imperfection of the mitral valve, hobnail liver, and small contracted kidneys. The capsule of these appeared whiter than usual, and separated with great readiness from the gland. On cutting into the kidneys the decrease of size was seen to be chiefly at the expense of the cortical substance. A portion examined under the microscope exhibited the tubes much dilated and deprived of epithelium: no fat-globules are mentioned as being present. These conditions are thus accounted for:]

Such a condition may, we conceive, be readily produced by a tainted nutrition; the blood charged with the morbid matter or poison of gout furnishes to the glands an unhealthy pabulum, which experiences the changes necessary for healthy nutrition in a very imperfect way. The impaction of the gland is sufficiently explained by this hypothesis. When much of the vascular system of the gland has been obliterated, partial congestions take place as a necessary consequence. Some of the Malpighian bodies contain too much blood, while others would be imperfectly supplied. From the former, effusion of serum would take place in the uriniferous tubes, and furnish the small quantity of albumen which is observed in the urine.



Lastly, the small quantity of epithelium which is formed indicated a very defective elimination of urea and uric acid. Hence the urine in these cases is pale and of low specific gravity, and contains these products in very limited quantity.

To this state of kidney I would give the name of the "gouty kidney." To what extent the changes which have taken place are due to inflammation, or how far simple inflammation, without the addition of morbid matter in the blood, is capable of inducing similar alterations I do not at present undertake to decide. Rayer has recognised the small and contracted kidney as the result of chronic inflammation, and it has been viewed in this country chiefly as the last stage of Bright's disease. This latter interpretation of it I now feel convinced must be erroneous.

[The diagnosis of the "gouty kidney" is thus laid down:]

The patient is evidently of a gouty habit, as evinced by general signs, and by his family history, habits of living, and by his having had more or less gout in his limbs. There is dropsy, though this is by no means a necessary symptom, nor is the dropsy so general or great as in Bright's disease. The quantity of urine is not diminished; on the contrary, it is either normal or increased; it is pale, of low specific gravity, and contains albumen in *small quantities*. The continued epithelium-cells filled with fat in the urine would negatively prove that it is not Bright's disease.

[Our readers are aware that this appearance is by no means generally admitted as a necessary concomitant of morbus Brightii.]

ART. 37.—*Treatment of Acute Rheumatism*.—In recent cases Romberg's practice is to bleed in the first instance: to keep the painful limbs at an equable temperature by enveloping them in wadding, and to exhibit ten minims of the tincture of colchicum seeds every two hours, combined with two scruples of the sulphate of magnesia. The remedy found most efficacious in shortening the duration of an acute attack was the bichloride of mercury. To adults it was given in the dose of 1-8th to 1-6th of a grain three times a day. Counter-irritants were at the same time applied.

*Romberg's Clinical Observations. Brit. and For. Med. Rev., July 1847.*

ART. 38.—*On the Alkaline Treatment of Rheumatism*.—In a clinical lecture on rheumatism, Dr. Wright observes: "In advocating the alkaline treatment of acute rheumatism, I am speaking of no novelty of practice. For years past it has been recommended, but by whom first I do not know. At the same time I think it right to state, that I believe there are few, if any, practitioners who have given it a fairer trial, have trusted more exclusively to it, or have derived better results from it, than myself. For six years past I have tried it in every case of rheumatism that has occurred in my dispensary and private practice, and seldom have I been obliged to have recourse to other remedies. I have never, in this space of time, had a case that has terminated fatally, and yet in not one instance have I ordered bleeding from the arm. Leeching and cupping, and these but rarely, have been the extent of my depletive measures. Yet I have had many cases which have equalled, if not exceeded, in severity those which I have seen progress indifferently, or not at all, under the opposite mode of treatment. Yet do not mistake me, and suppose that I am lauding alkalies as specifics in rheumatism. Nothing is further from my intention than to do so: my experience inclines me to the belief, as I have before said, that there is no such thing as specificism in medicine. An agent of this class, you know, should in all cases be infallible; I never met with such a curiosity. All I wish to say and to prove, from my own observation, is that, in the majority of rheumatic cases, alkalies will alone prove curative; and that, when they fail of doing thus much they will at least supersede the necessity of large doses of more uncertain and more potent remedies."

ART. 39.—*Morbid Anatomy of Chronic and Acute Rheumatism*.—In a case of muscular rheumatism, Hasse found the muscles and cellular tissue subjacent dotted over with ecchymoses and delicate vascular ramifications, the latter tissue being likewise more or less infiltrated with yellowish transparent fluid. He gives the following account of the morbid anatomy of the joints in chronic rheumatism: "On closely examining the cartilages of the affected joints they were found of a

reddish hue; the articular surfaces of the bones presented scattered red points of different sizes. The foramina of the bony substance were also filled with a dirty red pulp, consisting of aggregated cells of a globular form, which treated with acetic acid displayed a large nucleus. There were also numerous blood-corpuscles. The fat-cells were few in number, and of a particular shape. The whole cell-wall was separated from the usually homogeneous contents, and the interval thus formed was more or less filled with oily granules. Occasionally a little spot of yellow was seen among the dirty red colour, which indicated the presence of normal fat-cells. The reddened portions were dotted with tubercular spots which were sharply circumscribed. The cartilage was in many places irregularly thinned, especially at the margin of the joint. On examining the bones of non-rheumatic persons, Hasse could not distinguish any of the above-mentioned changes."

The author concludes by the following remarks: "It is certain that in rheumatism the cellular tissue, as well as the bony substance, may become the seat of inflammatory exudation. It is even probable that, in the great majority of cases, especially the slighter ones, the morbid anatomy consists of the appearances described. The changes in the bony tissue may be easily recognised after many years have passed. Those in the cellular tissue are determined with more difficulty."

*Zeitschr. für Rat. Med., and Month. Journ.*

## SEC. VII.—DISEASES OF THE SKIN, &c.

### ART. 40.—*Treatment of Lupus.* By M. PUTEGNAT.

(*Revue Méd.-Chirurg.*, Août, 1847.)

[The author of this paper recognises the scrofulous origin of this intractable malady as the general rule, but admits also that it may frequently be the result of the syphilitic cachexia. Regarding the disease as one of constitutional origin, he insists upon the necessity of having recourse to general as well as local treatment, and gives the following directions for carrying out the two indications:]

*General Treatment.*—The patient should wear flannel, and be rubbed twice a day with the flesh-brush. Twice a week he should take a bath, to which a decoction of walnut-leaves and sage has been added. His apartment should be airy and dry. His diet is to be good, and a certain quantity of wine may be allowed.

Every day he is to take from twenty to a hundred drops of Pearson's arsenical solution in four doses, and in addition to this he is to drink daily a pint of a decoction of walnut-leaves, or of sarsaparilla, if there be a suspicion of a venereal taint. In either case  $\mathfrak{ss}$  to  $\mathfrak{3j}$  of the iodide of potassium is to be added.

[The local treatment adopted by the author varies, according to the presence of one or other of the three varieties of lupus which he distinguishes, viz.: 1. A particular condition, chiefly of the face, in which the skin is smooth and shining, and of a red coppery colour, without tubercles or ulceration. 2. The tubercular form. 3. Ulceration.]

1st. In the first variety, if the skin is hot and burning, and extremely sensitive to the touch, it is to be covered with an ointment containing the acetate of lead and opium. When the skin is soft, lint dipped in tincture of iodine is applied.

2d. The tubercular form is treated by friction every six hours with the iodide of sulphur ointment, after which the part is covered with lint dipped in tincture of iodine.

3d. The ulcerated form requires cauterization with acid nitrate of mercury, which the author regards as the best of all the caustics in use. The proceeding is repeated as often as the edges of the wound look blue and flabby. The iodide of sulphur ointment, and the tincture of iodine are used in the intervals of the cauterization.

If, after cicatrization has been accomplished by these means, the cicatrix exhibits a tendency to re-open, which is shown by its becoming red and tender, it is to be covered by the lead and opium ointment above mentioned. The treat-

ment is to be continued as long as the cicatrices are soft and sensible to the touch. The natural colour of the skin is said by the author to be restored, with the best chances of success, by the application of lint dipped in a solution containing the following combination, in the proportions of a piece the size of a nut to the pint of water: R. Sulphate of iron and alum, each ten ounces: muriate of ammonia, oxide of copper, and sulphate of zinc, each five drachms. The mass to be melted by a slow heat.

ART. 41.—*Observations on Itch.* By M. DEVERGIE.

(*Med.-Chirurg. Rev.*, July, 1847.)

M. Devergie believes that some of the generally received opinions concerning this disease possess a very insufficient foundation, and, after long and attentive observation in the wide field at his disposal, he has arrived at the following conclusions:

"1. There is a very general opinion prevailing in the world, that the itch is the cause of the skin diseases which may subsequently occur. Without attaching too much importance to this, does it not rest on more or less probable foundations? 2. Although itch is said to be essentially contagious, it may yet frequently arise spontaneously in individuals placed in similar conditions under which it was primarily developed. 3. There is no proof that it has been transmitted from animals to man. 4. When medicines cure the itch, it does not follow that this is by destroying the acarus. The cure of the pustules may be rather said to lead to its death. 5. This insect may just as well be considered as a morbid product as a cause. 6. The experiments undertaken to show that the contagion is operated by means of the insect offer insufficient proof of this being the sole means of infection. 7. In the hypothesis of contagion being due solely to the acarus, as the contact of individuals with each other does not always take place in the same manner, we must suppose that the acarus for a certain period crawls over a large portion of the surface of the body to the place of election (the hands and feet), to the neglect of many other portions, which a few days after will be covered with itch-pimples. This regular and simultaneous development is much more likely to be dependent upon a general cause acting upon the entire economy, than upon a local one, arising from an insect transplanted from one individual to another. 8. If the acarus is the cause of the itch-pimple, it seems difficult to understand how it escapes from the central point of the pustule while digging a deeper gallery beyond it, scarcely ever having any communication with another pustule. This fact, which may be daily observed by the naked eye, is much more in harmony with the hypothesis of a morbid generation. 9. There is nothing fixed in the incubation of itch, which is much more in accordance with what takes place in other cutaneous diseases than with the idea of infection by means of an insect. 10. It is in the severest form of itch, the pustular, that we find the fewest acari. This form is cured most easily, and seems the least contagious. 11. It is singular to find the same insect producing three different forms of eruption: and not only are these forms different, but so are their contagious properties and the number of insects found in them. 12. Statistics show us that itch is the most common antecedent of impetigo, lichen, and eczema. 13. The itch may disappear for a greater or shorter period under the influence of a general affection of the economy, and like the other cutaneous diseases, remain latent, and then reappear with renewed energy after five or six weeks, without any new infection having taken place."

From these corollaries M. Devergie draws the following conclusions:

"1. If the acarus is one of the phenomena of itch, its existence as a morbid product is as admissible as its operation as an agent of transmission. The known facts agree much better with the former hypothesis than with that which considers the insect as the exclusive agent of transmission and only cause of contagion. If even the acarus, by being transported to another individual, may communicate the disease, the products of secretion, the itchy atmosphere, and the clothes impregnated with this, may also produce it. 2. The principal therapeutical consequence deducible is, that we must treat the itch, and not the acarus, contrary to what is generally the practice. We should treat the disease like other cutaneous affections upon general principles, and not by mere local applications. Indeed,



is it not reasonable to take into consideration the two well-marked symptoms, whose sudden suppression is so mischievous in other cutaneous diseases, viz., the *itching*, become habitual in proportion to the duration of the disease, and the *secretion* in the pustular form? In the place of searching for means to cure the itch in the shortest possible time, should we not endeavour to do so gradually in proportion to its duration? Should we not, after its cure too, prescribe in some subjects the prolonged use of simple baths, to reduce the morbid sensibility of the skin and re-establish its functions, or even vapour-baths to produce a sedative effect on the nervous system, as well as a depurative cutaneous secretion, if I may be allowed such an expression? So in regard to pustular itch, should we not act repulsively upon the intestinal canal by means of purgatives, to compensate for the suppression of secretion over so multiple a surface? This is my practice, and I do not feel disposed to abandon it, because it seems a rational means for the prevention of the ulterior development of other cutaneous diseases, of which I believe itch to be one of the predisposing causes.”

ART. 42.—*Clinical Observations on the Treatment of Squamous Diseases of the Skin.*  
By M. DEVERGIE.

(*Gazette des Hôpitaux*, Nos. 1, 13, 22, and *Med.-Chirurg. Rev.* 1847.)

*Arsenic* may be given in pills or in solution. The Asiatic pills so much used in the French hospitals are thus composed: Arsenious acid, gr. j; black pepper. grs. xij; gum. Zij; water, qs.; to form twelve pills. One pill, or at most two pills, to be given for six or eight weeks. M. Devergie considers this mode of exhibiting arsenic as unsatisfactory. Among the solutions the liquor. potassæ arsenites of the London Pharmacopœia is best known. M. Devergie gives one drop the first day, two the second, and thus increases the dose by single drops till twelve or sixteen are given, which is his maximum.

Under the arsenical treatment, in favourable cases, the scales fall off. The skin assumes its proper level, and the affected parts, from being red, become brown and smooth. This is of importance, as it is only when we have obtained this brown colour that we can be assured of the cure. It is a proof of the efficacy of the medicine, and a measure of the quantity required. So certainly is this brown colour of the spots a sign of cure, that if there be a relapse within a year, or even in three months, it never reappears on the spots originally affected.

The first effect of arsenic is a general falling away of the whole body, and a leaden brown coloration of the face; from which it results, that patients who have been cured of their cutaneous affection, and are in other respects well, have the appearance of having just recovered from serious disease. Arsenic seems to exert a modifying power on the secretion of fat, and on this account M. Devergie has prescribed it successfully for the removal of adipose tumours.

Arsenic gives rise to certain accidents which should be borne in mind. All persons cannot bear the same dose. In some eight drops will produce anorexia and other disorders of the system, and in such instances its use must be suspended. It sometimes happens, that when we have again reached six drops a day, all the poisonous effects are again reproduced, and in this case we must definitely renounce it, as it will not cure the disease against which it is employed. [This statement is contradicted by the experience of Mr. Hunt. See Report.] Some patients will say that they suffer from dyspnœa, others from partial loss of limb, others from colic or diarrhœa; in a word, from a series of strange nervous phenomena, none of which are characteristic of poisoning from arsenic. Of these symptoms, dyspnœa is the most common. The presence of this medicine in the urine will prove that the system is salivated with it, and that its therapeutical action has reached its limits.

*Antimonials.* This class of medicines may be exhibited either in pill, as Plummer's pill, or in solution. M. Devergie prefers the latter form. He gives  $\frac{1}{2}$  gr. of tartar emetic with  $\frac{1}{2}$  a drachm of cream of tartar, followed by a glass of *eau sucrée*. In this way he states that it produces neither vomiting nor purging. This medicine requires to be continued for two months.

M. Devergie does not put much faith in external treatment of the scaly diseases,

but of ointments he prefers tar, or soda mixed with lard. White precipitate ointment is sometimes used by him (two parts to 6—30 lard).

In choosing among the variety of treatment of these diseases, several circumstances have to be taken into the account. 1. If the disease be hereditary, no treatment will in general be followed by complete success. 2. We must learn the duration of the disease, and whether it be a relapse. If it has never been treated, we must endeavour to obtain a radical cure; but if it has already been treated, we must fear its reappearance.

In young and delicate subjects, M. Devergie states that he has seen much advantage from the cold-water treatment, but it has no more power in preventing relapses than any other.

## SECT. VIII.—THERAPEUTICS.

### ART. 43.—On a New Criterion for the Regulation of Blood-letting.

(From a Review of Polli's Researches on the Blood. *Med.-Chirurg. Rev.*, Oct. 1847.)

[This criterion is deduced from the author's former series of researches, and confirmed by practical application in the hospital. It is thus stated to be "*The period of coagulation of the blood observed at different intervals of time between the abstractions, and in different portions of the mass taken during one blood-letting*;" and is amplified as follows:]

1. Every time a large abstraction of blood is practised, so as to lead to lipothymia, the last portion of that removed always coagulates with greatest promptitude, whatever may have been the time occupied by the first portion in coagulating. 2. Whenever, on the contrary, upon a person suffering from sanguineous congestion of the nervous centres, asphyxia, apoplexy, &c., bleeding is practised, and, by its use, the vital functions are again set at liberty, the last portion of the blood so removed coagulates much more slowly than that which was first emitted. 3. That it suffices to interrupt in some manner the course of the blood in the vein, or to diminish, by means of a ligature applied to an extremity, the irradiation of the nervous power, in order to secure the speedy coagulation of blood, which, a short time after, owing to the obstacles being removed, may reacquire the power of remaining long without coagulation. 4. That in diseases decidedly of an inflammatory and grave character, during which for the safety of the patient repeated blood-letting is requisite, if, on the occasion of every venesection, the coagulation of the first and last portions drawn be examined, it will be found that at the beginning the coagulation of the latter portion takes place *subsequently* to the former, and continues to do so in an equal ratio to the development of the morbid process, until this reaches its height. From this point, however, as the disease commences declining, the coagulation of the blood of the latter portions *precedes* that of the former. 5. That in the cases in which abstraction of blood has been desisted from for some days, when the *slow coagulation of the last portion* taken announced a continuance of the phlogistic increment and the tolerance of blood-letting, it has become necessary to resort anew to this therapeutical agent, which can in no case be laid aside with the ready cure of the patient, unless the latter portion of the blood manifests an opposite disposition to that now pointed out. 6. That in opposite cases, in which the abstraction of blood is persisted in, *notwithstanding its rapid coagulation* after all the venesections and during the two extreme periods of the same one, it has to be speedily renounced in consequence of the symptoms of intolerance which manifest themselves; and in those few unfortunate cases in which blood-letting is obstinately persevered in under the guidance of fallacious symptoms, vital exhaustion cuts short the career of the patient much more rapidly than would have done the course of the disease.

It results, then, from these observations, that the maintenance of the fluid state of the blood, comparing one bleeding with another, or different periods of the same bleeding, is a measure of the vital energy proper to the individual, and of that brought into play by the morbid process; and that hence may be determined tolerance and indication of blood-letting; as on the other hand a prompt coagula-

tion of the blood announces diminution of vital energy, or its exhaustion by the pathological action; and in every case that the power governing the phlogistic or morbid vital movements is lowered."

[The criterion is of easy application, the first and last portions of blood drawn being separately collected in glass vessels, and placed at rest beyond the influence of disturbing causes before adverted to. As the difference of time employed by the blood in coagulating depends both upon the condition of the individual and the amount of blood drawn, the criterion in question may not only serve as a guide in judging of the propriety of bleeding in a certain contingency, but may determine the exact quantity to be drawn, and the period of its repetition.]

"Let an individual be bled to faintness, and you will always have the last portion of the blood rapidly coagulated, and consequently deprived of buffiness. Receive the blood into six, eight, or ten small recipients, of a similar form and nature, and the coagulation in the first will be in exact relation with the disposition of the fibrine to maintain itself in the liquid form proportionately to the particular physiological or morbid state of the organism; while in the last, such disposition will become gradually paralyzed and almost destroyed, from the gradually increasing effect of the abstraction itself. By contemplating this phenomenon, which is always a result bearing proportion to the two influences above alluded to, we are enabled to lay down a rule for in some cases practising abundant blood-letting at one time, in others practising it at intervals, or in small quantities; or again simply interrupting its flow once or twice for some minutes during the abstraction, &c., accordingly as we may be desirous of obtaining a sudden subdual of the morbid exuberance of the vascular activity, or of securing a copious depletion without too great exhaustion of the strength, or the functional disturbance ensuing upon lipothymia, which may injuriously affect the regular course of some affections.

"From the different coagulation of the various portions of blood we may, moreover, as we have said, measure the *intensity of the inflammation* and the *tolerance of the individual*; or, as others would express it, we may measure the morbid capacity and the amount of diathesis. There may, indeed, be a case in which the first portion of blood drawn indicates by its very slow coagulation a very high pathological condition, while the last portion announces in its rapid coagulation that the emission of blood has completely lowered the powers. This phenomenon may be dependent upon the existence of a very circumscribed, though a very intense affection, or upon exhaustion induced in an individual primarily possessed of very feeble powers of organic reaction; and in such a case bleeding must be most reservedly employed, and frequently entirely rejected, for the reason that it is a lesser danger to leave the disease to proceed unchecked, than to have recourse to means which remove it and the patient together. This difficult pathological circumstance, which a celebrated Italian physician justly compares to an *island of fire in a sea of ice*, is already known to practitioners as one which requires in the use of antiphlogistic measures great regard to be paid to the failure of the general strength. But, unfortunately, it has not always been easy to establish its diagnosis in time, or before unadvisably energetic therapeutical procedures have been put into force. But the criterion I propose informs us of these two opposite conditions co-existing in the same individuals, and measures their degree with a facility and security that no method of investigation hitherto recommended in these difficult cases can boast of."

[To the objection that the criterion only comes into operation after the abstraction of blood, Dr. Polli observes that, in ordinary inflammatory diseases, the repetition of the blood-letting is the point to be inquired into; and that, even in those rarer cases in which the diagnosis is very obscure, and in which a first bleeding might prove the cause of safety or of death, no harm whatever, and much good, would result from a very small *exploratory* venesection, and made in the view of obtaining the desired information. Such, consisting of one or two ounces, received in two separate vessels, should be instituted in all obscure cases of this kind, before resorting to an ordinary venesection.] "Perhaps even those small bleedings should be practised in all diseases indistinctly as a means of exploring the condition of the blood, for the same reason that, since auscultation has been employed upon all patients, it has not unfrequently revealed latent morbid conditions, to



which the attention of the practitioner might otherwise not have been called until a more remote and a too late period." [A small subtraction which can do no harm to the economy, will yet depict to us the true characters of the vital condition of the tissues, and of the amount of the exaltation of the vascular activity and nervous function. It often suffices for the discovery of those circumscribed and concealed phlegmasiæ, which, frequently not spreading to such organs as would furnish external symptoms of their existence, pursue their undermining course until they have reduced the viscera they affect to such a condition, that some acute contingency at last suddenly betrays their formidable character.]

"Although the preservation of its fluidity by the blood, or the more or less time it requires for coagulation, constitutes for us the most certain measure of the activity of the phlogistic force, this is, however, only durable in its indications in proportion to the stability of the morbid process itself. The phlogosis may, during its course, spontaneously increase or diminish in intensity, accordingly as it extends to neighbouring tissues, or is confined to those first invaded. So that the different resistance of the blood to coagulation, which in every case announces with a rare exactitude the present state, cannot be extended, except within certain limits, to the indication of that which is to follow; since this latter can only be the complex and simultaneous effect of the condition of the development of the pathological lesion, and of the modification which the blood-letting itself may have induced. Our criterion, as expressing the present state of the organism, and the impression which the bleeding has developed, furnishes indications which are available for about twelve hours after, and may continue to be so for a much longer period, even to the supervision of complete health, providing new morbid causes and accidental inflammations do not supervene and complicate the course of the disease. And of this we may assure ourselves by the repeated observation of the coagulation of blood taken at brief intervals; since the times employed in the coagulation of the blood taken at the successive abstractions will generally glide, whether these are diminishing or increasing, gradually into each other, sudden variations not being observable, save when exacerbations or irregular complications coincide."

[In corroboration of the above views, tables are furnished of twenty cases of inflammatory disease observed in the hospital, for the relief of which were collectively performed 147 venesections. Notes to each case reported exhibit the author's views of the amount of corroboration derivable from it. Some of these are highly interesting, but we have only space to notice some of the practical conclusions he arrives at.]

"The observations already made upon the indications the physician may draw from the observation of the coagulation of the blood, and the clinical cases adduced in confirmation and illustration of this criterion, clearly prove that its value rather lies in its enabling us to fix a limit to the abstraction than in encouraging its continuation. And, in fact, if we are not deceived, the comparison of the coagulation of the first and last portions may, independently of the presence of all other symptoms, distinctly indicate whether the evacuation will tend to normalize the vital powers of the functions of the organism, at one time liberating them from oppressive congestions, and at another from the obstacles presented by the excessive and unbalanced action of the nerves, or whether it attacks them with all its impoverishing effects, and directly exhausts the forces necessary to the carrying on of life. Of the two indications which this sign offers the last is not only the most important, since its neglect almost amounts to a fatal result in the disease, but it is also the most attainable, or at least the best supported by facts. The cases referred to show that, if the coagulation takes place with a certain celerity, and this manifests itself repeatedly, and goes on increasing with the blood-letting, we cannot persist in the measure without losing the patient; while the patient hardly ever dies when it is suspended prior to the coagulation having acquired great rapidity.

"It is not necessary for the complete cure of an inflammation to continue the bleedings until the blood no longer gives any buffiness: while it is absolutely necessary to cease the omission when the blood coagulates more rapidly than in the normal state. The production of buffiness of blood of equal coagulability, as shown in the former series, is always rendered more easy and in larger quantity after a certain

number of bleedings than at first, in consequence of the diminished density which the blood acquires, which naturally always much diminishes the phlogistic expression, and the consequent indication for bleeding drawn from the crust that covers the blood after a certain number of emissions. The crust or buffiness, in fact, not being essentially produced by an increase of fibrine, by a diminution of red globules, or by an attenuation of the serum, but arising from a certain slowness of the coagulation, (of that faculty by which, in certain morbid conditions of the organism, and especially under the influence of the phlogistic process, the fibrine has acquired the power of maintaining itself in a state of fluidity for a period always much longer than in the normal state,) it may at once disappear by the operation of whatever modifies that slowness. When the phlegmasia is subdued, and the morbid reactions give way to healthy movements, the blood will cease to contain fibrine in a hypersthenic condition, and will then undergo coagulation in a period of time that does not permit the appearance of the buffiness. It happens not infrequently that if, for some reason independently of a reproduction of the phlegmasia, we draw blood during the advanced convalescence of a severe inflammation, in the treatment of which bleeding had been suspended, while the blood was yet covered with a firm phlogistic crust, it will now be found to present no trace whatever of this. A patient may have blood in circulation which if drawn would furnish a buffy crust, and who will yet be perfectly cured without blood-letting. This change in the blood within the vessels, without profuse crises inducing the belief that the morbid matters supposed to be indicated by the buffiness had been evacuated by other channels, frequently excited the surprise of the ancients: but faithful to observation, they had nevertheless laid down as a canon "*Ob solam crustam inflammatoriam venæsectio repetenda non est.*" (Quarin, *Met. Med. Inflam.*, p. 70.)

ART. 44.—*On the Rubefacient and Counter-irritant Effects of Potassa Fusa in certain Forms of Disease.* By JOHN BARNES, M. D., of St. Louis.

(*British Amer. Journ.*, Sept. 1847.)

Having in a large number of cases employed the potassa fusa, or vegetable caustic, for upwards of twenty-five years in his practice, in Philadelphia, Mississippi, and St. Louis, as a powerful rubefacient and counter-irritant in some forms of diseased action, Dr. Barnes deems it due to the profession to present, for the consideration of its members, the results of his experience in the employment of this article of the materia medica.

In the different forms of whitlow or paronychia, and in all the stages of each form of this painful affection, he has used this remedy very extensively, and with the most satisfactory results. If applied early, and before deep-seated suppuration and ulceration have taken place, the disease may be promptly removed; and, even in later periods of the disease, when suppuration has commenced, the mischief in many cases may be quickly arrested, and the patient's suffering greatly mitigated, and its duration shortened. Even in those cases in which, owing to neglect or mismanagement, the deep-seated suppuration and consequent ulceration have been extensive, and the pus has made its exit, causing great injury to the surrounding parts, the chronic inflammation and consequent enlargement of the diseased tissues are essentially benefitted by its application; care being taken to avoid those parts where the cuticle has been destroyed.

Dr. Barnes does not pretend to assert that, in all cases, the early application of the vegetable caustic will supersede the necessity of an operation to procure an exit for the confined pus, but that he has seen a great many cases get well under its action, which he believes could not have been cured without an operation, had any other mode of treatment been adopted.

This remedy is especially adapted to the treatment of those cases of whitlow in which the disease has its seat in the vicinity of the metacarpal bones, as the operation of cutting down to the diseased tissues in this part is rendered hazardous, owing to the situation of the circumflex arteries of the hand.

His mode of using the vegetable caustic in cases of whitlow or paronychia, is to take a portion of a stick of it, and, wrapping a roll of paper round one end of it to protect the fingers from its action, to slightly moisten with water the other end, and rub it over the surface of the diseased and adjacent parts for a few seconds,

and until the patient complains of a painful burning sensation; if this burning sensation very quickly subsides, he frequently reapplies it for a short time. In most cases, however, the burning sensation lasts for several minutes, and patients often complain of its great severity.

To avoid all danger of destruction of the skin, he attends carefully during its application, to the sensations of the patient, and desists so soon as much pain is experienced, and carefully removes, with a piece of linen cloth, any portions of the vegetable caustic which may remain on the surface to which it has been applied.

These applications of the vegetable caustic are to be repeated as often as the exigencies of each respective case may demand. In some cases the application may be made daily, and even oftener; in other cases every other day will be sufficient, while, in some cases, once or twice a week will be as often as the diseased parts will admit of its application. During the employment of this remedy, such other treatment as the case requires should be adopted in connection with it.

In the treatment of venereal bubo he has derived great benefit from the application of the vegetable caustic in promoting its dispersion or absorption. He applies it, repeating the application as often as may be necessary, over the whole surface of the skin covering the enlarged gland, and for an inch or two beyond, in the same manner as directed in the treatment of whitlow; and its use when applied to the delicate skin of the groin is usually succeeded by a crop of minute pustules.

In a large number of cases he has very happily effected dispersion of the bubo by the use of this remedy, and in those cases where, notwithstanding its application, the bubo has gone on to suppuration, the sufferings of the patients have been thereby greatly mitigated.

If deemed necessary, the application of leeches may precede the use of the vegetable caustic, and during its employment, mercurials may be taken internally, and mercurial frictions be made to the inside of the thighs, and the bubo itself dressed with stramonium ointment, or any other appropriate application. In many cases, however, if the bubo be not very large, a few applications of the vegetable caustic will be sufficient for its entire removal, without the use of any other remedy; but prudence, at the same time, dictates the exhibition of some alterative medicine for the protection of the constitution from ulterior consequences, which may arise from the venereal poison.

As respects the use of the vegetable caustic as a rubefacient and counter-irritant in the forms of disease before mentioned, he feels no hesitation in recommending it as a most efficient remedy, having fully tested its virtues in numerous cases in a long course of practice.

He has no doubt the vegetable caustic will be found an invaluable remedy in almost all cases in which it may be desirable to produce prompt and efficient influence by rubefacients and counter-irritants.

ART. 45.—*On the Therapeutic Powers of Electricity and Galvanism.* By Dr. GOLDING BIRD.

(*Medical Gazette*, June 11, 1847.)

[We have at various times (see Abstract, Vols. III. and IV.) reported the observations of Dr. Golding Bird and others, on the important aid to be derived from electricity and galvanism in the treatment of several forms of disease; in the following abstract we propose giving a more extended series of remarks by the former writer, who has had unusual opportunities of testing the applicability of those powerful agents. The diseases in which he has principally used electricity are chorea, amenorrhœa, and various forms of paralysis. The number of cases of the former disease submitted to this treatment amounted to thirty-seven, of which thirty were completely cured. Of amenorrhœa twenty-four cases were thus treated, and in these the remedy succeeded in twenty. In connection with amenorrhœa Dr. Golding Bird remarks as follows:]

In electricity we possess the only really direct emmenagogue which the experience of our profession has furnished us with. I do not think I have ever known it fail to excite menstruation where the uterus was capable of performing this



function. Disappointment will, however, most certainly result if we have recourse to electricity merely because a girl does not menstruate; we must never lose sight of the fact that, after all, the majority of cases of amenorrhœa depend upon an anemic condition, and the patient does not menstruate simply because she has no blood to spare. Nothing can be more ridiculous than to apply electricity, or other local stimulant to the uterus when chlorosis exists; the first indication will be to restore the general health, and then, and not before, to stimulate the uterus. It is true that, in a large proportion of cases, the catamenia will appear as soon as the chlorosis is cured; in such cases, of course, there will be no need of the employment of electricity, but still a large number will occur in which, even after the complete relief of the anemic symptoms, the uterus remains torpid, and refuses to act; in such cases a few shocks transmitted through the pelvis seldom if ever fail in inducing menstruation. I have repeatedly known the catamenia, though previously absent for months, appear almost immediately after the use of the electricity, in more than one instance the discharge actually appeared within a few minutes.

[Dr. Bird, in the next place, records his experience of electricity in the various forms of paralysis, including paralysis from lead, rheumatic paralysis, paralysis of the portio dura, and hysteric paralysis; but as his remarks on these subjects are, for the most part, identical with those which we have formerly reported (Abstract, Vol. IV, p. 35), we shall not here repeat them: we shall simply recapitulate his concluding observations, which will be found of considerable value to any of our readers who may be disposed to give electricity a trial in paralytic cases. His conclusions are:]

1st. When the paralytic lesion is recent, the cause still active, electricity not only does no good, but may often do much mischief. I would give an especial caution where rigid arteries are known to exist, or ramollissement of the brain is suspected. In more than one example of these affections I have known fatal apoplexy to be induced by the remedy in question.

2d. In paralysis accompanied by rigid flexure of the thumb or fingers, I have never seen electricity do any good.

3d. In cases of paralysis depending upon some physical cause, as effusion or pressure from other sources, when the original cause has been removed but the palsy remains, electricity, and especially the electro-magnetic form of it, is of the utmost value. These cases are not uncommon. . . . In such cases the electrical treatment must not be given up too soon, as if the paralysis be long continued, some of the new tissue deposited in the affected muscles, never having been under the stimulus of the will, persistence in the electrical treatment becomes necessary.

ART. 46.—*The Electric Moxa*.—[Dr. Golding Bird states of this mode of counter-irritation:]—It was long ago observed by Humboldt, and afterwards by Grapen-giessen, that when a simple galvanic arc was applied to a blistered surface, the part opposed to the most oxidizable metal was more irritated than that to which the negative plate was applied. In applying such a simple arc to the treatment of paralysis, I was struck with the remarkable effects produced, and such a combination of its results induces me to propose the following ready mode of establishing a discharge from the surfaces of the body. Order two small blisters, the size of a shilling, to be applied to any part of the body, one a few inches below the other; when the cuticle is raised snip it, and apply to the one from whence a permanent discharge is required a piece of zinc foil, and to the other a piece of silver, connect them by a copper wire, and cover them with a common water-dressing and oiled silk. If the zinc plate be raised in a few hours, the surface of the skin will look white, as if rubbed over with the nitrate of silver. In forty-eight hours a decided eschar will appear, which (still keeping on the plates) will begin to separate at the edges in four or five days. A common poultice may now be applied, and a healthy sore, freely discharging pus, will be left.

*Med. Gazette, June 1847.*

[It would appear that the chief advantage attendant upon this method of forming an issue is its painlessness compared with moxa, etc., otherwise it must be

allowed to be a tedious operation, four or five days being required to effect what may be done by liquor ammoniæ, followed by savin ointment, in as many hours.]

ART. 47.—*Substitute for Epsom Salts.*

Carbonate magnesia	. . .	15 parts.
Citric acid	. . .	21 “
Syrup	. . .	60 “
Water	. . .	300 “

The citric acid is first dissolved, and then added to the carbonate of magnesia diffused through water. It does not effervesce, but may be made to do so by adding half the acid at the time of taking it. The above proportions in grains would form a dose. [?]

*Medical Gazette, from Gaz. Méd.*

ART. 48.—*Di-arsenite of Quinine.*—Dr. Kingdon introduced a new preparation of quinine which he had lately succeeded in preparing. It is the di-arsenite,—that is, it consists of one part of arsenious acid, and two of quinine: it is a powerful medicine, and one which he has found of great benefit, especially in chronic cutaneous affections, and has no doubt it would be equally beneficial in ague, tic douloureux, and neuralgia. It possesses both the qualities of a mineral and vegetable tonic, and when the system has become habituated to either the one or the other (which we frequently find the case from long continued use), by the administration of this medicine you still keep up the former action, while at the same time a new one is introduced into the system. He related a case which demonstrates this very satisfactorily. A young woman who had been affected with lepra six years, was admitted a patient at the Exeter dispensary, under his care, and was ordered the liq. potassæ arsenitis, with decoct. dulcamaræ, three times a day. For a time the disease appeared to be improving, but it gradually got back to its former state, although the quantity of arsenical solution was increased to the full extent; he then ordered one-third of a grain of di-arsenite of quinine to be taken twice a day, and the following week the eruption was much improved—to make use of her own expression, “It was looking quite beautiful.” It has been gradually increased to four times a day, and now she is nearly well.

Dr. Kingdon has tried it in several other cutaneous diseases, and with equal success. The preparation is made in the following manner. He first dissolves sixty-four grains of arsenious acid, and thirty-two grains of pearl-ashes, or subcarbonate of potash, in four ounces of distilled water, by boiling it for about half an hour, and then makes it up to four ounces with as much water as may be required, so that each drachm may contain two grains of arsenic. He adds five drachms of this solution to two scruples of disulphate of quinine, previously dissolved in boiling distilled water; immediately a white curdy precipitate is formed, which is the di-arsenite; he then pours it on a filter and dries it. It is uncrystallizable in hot water, but soluble in alcohol. Dose gr  $\frac{1}{2}$  twice a day.

*Prov. Journ., Aug. 25.*

## PART II.

# SURGERY.

---

### SECT. I.—SYMPTOMATOLOGY AND DIAGNOSIS OF SURGICAL DISEASES.

ART. 49.—*Diagnosis of a Mercurial Sore.*—Dr. Porter gives the following as the characteristics of the mercurial in contradistinction to the venereal sore.

1st. Mercurial sores are not necessarily circular or oval, neither are their edges regularly defined; on the contrary, they vary in these particulars, and assume different forms as they spread; their edges are often quite ragged, loose, and undermined, and their borders are often marked with a thin transparent cuticle, like that of a newly-formed cicatrix, extending quite around them, and giving them a silvery-white appearance.

2d. The bases of mercurial sores are not hard, neither are their surfaces covered with the tenaciously adherent lymph so characteristic of venereal; on the contrary, the surface of the mercurial ulcer may present every variety of shape and appearance, sloughy at one spot, deeply excavated and rapidly ulcerating at another, with exuberant granulations at a third, and exhibiting a tendency to heal at a fourth.

3. But the most striking characteristic of the mercurial ulcer is its tendency to spread, and the manner in which it enlarges itself. Venereal sores when not affected by phagedena increase slowly, and having reached a given size remain stationary; the mercurial generally spread quickly, and there seems to be no limit to the size they may possibly attain. I have seen an ulcer as large as my hand in each groin of the same individual. Mercurial sores, too, are easily distinguished from the venereal when they assume an herpetic character, and heal in one part whilst they are spreading in another, which the latter never do; this latter diagnostic is often extremely valuable in ulcers of the throat, and on the penis, where any extensive loss of parts may be most sensibly felt during the life of the patient. The mercurial ulceration often attacks the cicatrix of a recently healed chancre, and a fresh sore is thus formed, a circumstance that does not happen to the true venereal sore, except by some accidental injury, or the application of a new infection.

*Dublin Medical Press.*

ART. 50.—*Signs of Fracture of the Cervix Femoris.*—In allusion to a case recently occurring in the person of a woman, aged 53, M. Velpeau made the following remarks: "Pain and swelling are signs of little consequence, as they may equally exist in fracture or sprain. The impossibility of *raising the heel from the bed* is a sign. It may certainly be present also in a painful affection of the joint, but in the fracture of the cervix there is an absolute impossibility of raising the limb, while in the other affection this may be done if the pain be disregarded. Thus, in a luxation, the patient seems at first unable to raise the limb, but he can do so by perseverance. *Eversion of the foot* is not a pathognomic sign, as it may exist in other lesions, e.g. luxation on to the pubis; but in the case of luxation, not only is the limb everted, but neither the patient nor the surgeon can change its direction, while in fracture the surgeon easily turns the foot inwards. There are other affec-



tions in which the foot is rotated outwards, as in paralysis, and certain painful affections of the hip. The *admeasurement* of the limb is of great importance, but it is of much more difficult accomplishment than is generally believed. The inclination of the axis of the pelvis, or of the limbs themselves, often gives rise to apparent differences, against which we must be on our guard. We must never depend on mere inspection, but must carefully measure the limb after having placed the patient on his back, and take care that he lean neither to one side nor to the other. In those persons in whom the bony points are prominent, it is easy enough to measure from the iliac spine to the upper edge of the patella: but there are others in whom the iliac spine is so rounded off, that we cannot be certain that we are applying the tape upon exactly corresponding points of the two sides, and an apparent difference, amounting to some lines, may result. So also the patella is not only a fixed point, but its superior angle may be somewhat higher on one side than on the other. In this way several slight errors conjoined may give rise to the belief in a shortening, which has no real existence. By carefully guarding against any obliquity of the pelvis, ascertaining exactly the position of the superior anterior spinous process, and carrying the tape down to the malleolus, instead of the patella, we shall avoid all serious errors.

*Gazette des Hôpitaux*, No. 68.

ART. 51.—*M. Kün's New Instrument for the Diagnosis of Tumours.*—M. Kün, Professor of Physiology in Strasbourg, presented to the Medical Society of that city an instrument, the application of which is likely to produce the most beneficial results in the diagnosis of various kinds of tumour. It consists of an exploring needle, having at its extremity a small depression with cutting edges. On plunging this instrument into a tumour to any depth, we can extract a minute portion of the tissue of which its various layers are composed. In this manner a microscopic examination of the tumour can be practised on the living subject, and its nature ascertained before having recourse to an operation. We have proved the utility of this method of diagnosis on three occasions, and seen conscientious practitioners renounce an operation previously determined on when the cancerous nature of the tumour has been demonstrated by the microscope.

*Monthly Journ. of Med. Science*, May, 1847, p. 853.

ART. 52—*Separation of the Sacro-iliac Symphysis.* By M. KLUYSKENS.

(*Gazette Méd. de Paris*, 16 Avril, 1847, from *Ann. et Bull. de la Société de Méd. de Gand*.)

Science reckons so few examples of this lesion that the cases contained in M. Kluysken's memoir form, unquestionably, the most interesting part. We shall, accordingly, extract them, and add those which M. Meulewaeter has recorded in his report on M. Kluysken's work.

CASE I. A tall, strong girl, 24 years old, fell from a height of six feet. M. de Block, on the 7th of May, 1798, found her suffering horribly on the left tuberosity of the ischium, the point on which the shock was received. The inferior limbs were of the same length, without any deviation or abnormal twisting of the left. The patient could raise herself altogether, and no crepitation was felt. The surgeon viewed the case as a violent contusion; after eight days the pain was almost entirely gone. She was recommended rest for some time longer, then to rise, and by degrees to walk with great caution.

M. de Block had lost sight of this patient, when, thirty days after the accident, she returned, limping very much. She stated that on the thirteenth day, although she had not quitted her bed, the left limb began to shorten, that then having risen, the more she walked the shorter it got, and consequently the halting became more evident.

She was made to take a few steps; every time she tried to support herself on the left foot the body was so suddenly flexed laterally towards the left side, that it might be said that the superior edge of the ilium approached with violence towards the false ribs. The form and the motions of the left pelvic extremity were as regular and normal as on the first day, only it might be perceived that the crest of the left hip-bone was higher than that of the right. On pressing upon it from above downwards the bone gave way, descended, the level was re-established

between the two crests of the ilia, and at the same time both feet were brought to their natural equal length. On ceasing the pressure the left limb shortened again, but very slowly. By these signs it was recognised that the disease was a diastasis, or a disjunction of the articulation of the left os innominatum with the sacrum. The shortening of the left limb was three breadths of a finger.

After having consulted on the treatment, it was resolved to employ Van Gesscher's apparatus for permanent extension, which consists in maintaining the limb in the horizontal position on a hard bed, the extension being effected by a mechanism resembling Desault's splint. An elastic bandage, eight inches wide, was so placed that its superior edge covered the crest of the ilium, and its inferior edge corresponded with the inferior part of the sacrum. An assistant pulled at this moment on the left foot, and after it was brought to a level with the other, the band was definitively attached round the body, as well as the extending band.

The application was made on the 13th of June; up to the 15th of September it was twice replaced. At this period it was taken off, except the bandage round the body. The patient remained eight days longer in bed, finally she rose and walked, and the motion of her limb was regular, and as strong as before the accident.

CASE II. A young woman, 19 years of age, kneeling in a church on 30th May, 1810, made suddenly a violent effort to carry her hand to a certain distance to the left side. She felt at the moment a very violent pain a little above the right haunch, and heard there a noise like the tearing of a piece of linen. Having returned home, the pain slightly subsided, and she could walk; nevertheless, after ten days, the symptoms persisted: she consulted a physician, who, after trying frictions, advised her to do nothing more, but wait. Yet the right lower extremity had begun to diminish in length, and the shortening went on increasing. M. de Block was consulted on the 29th of June. The right foot was shortened about three breadths of a finger, the motions of the coxo-femoral articulation were executed freely; the patient turned the foot voluntarily inwards and outwards, and raised at once the whole lower extremity, a convincing proof that the shortening depended neither on a luxation nor on a fracture of the femur. The os pubis was normally united, but the posterior part of the right ilium was mobile and painful, and its crest more elevated, and approaching more nearly to the inferior edge of the last false rib than that of the opposite side. On pressing with all his force with his hand on the right iliac crest from above downwards, M. de Block made the two feet resume their perfect level. When he withdrew the pressure, the right foot retracted slowly, and regained its former position. He twice repeated the same manœuvre, and both times the same phenomena took place. The diastasis of the right os innominatum being evident, M. de Block applied, on the 4th of July, the apparatus which had succeeded so well in his hands in the preceding case.

The 11th it became loose, and had to be replaced. The same accident occurred on the 20th, and produced a shortening of about the breadth of a finger and a half. This was attributed to the intractability of the patient, who would only lie with her head very much raised; warning her of the consequences which must result from these continual derangements, she became more reasonable.

The apparatus was again replaced on the 2d of August, and left on till the 3d of October. The cure was complete, nevertheless the patient was made to keep quiet for five days longer. She then rose and walked, and was soon able to resume her ordinary occupations.

CASE III. (By M. Kluy-skens, the father of the author of the present memoir.) A conductor of a diligence was precipitated from the box on to the pavement. There was sacro-iliac diastasis, and a cure was effected in six weeks.

CASE IV. (By the same.) The patient was a labourer, who received on the inferior part of his back a rather heavy beam from a certain height. The case was serious; there was also comminution of the spine, and a cure was not effected until after the expiration of six months.

CASE V. (By M. Verbeeck.) A healthy young girl, of a lymphatic sanguineous constitution, after a slight effort, followed by a fall, felt a pain in the haunch. Walking became impossible; she was carried to the hospital. M. Verbeeck found a sacro-iliac diastasis. The cure was slow, but it was effected simply by bandaging the body. We believe, however, that a weight was suspended by a pulley

to the extremity of the foot for the purpose of extension, but was subsequently discontinued.

These three last cases will, doubtless, appear too succinct. We have extracted them *verbatim* from the report of M. Meulewaeter. As the true riches of science, in an injury so little studied, consists especially of facts, we think it more useful to mention here all the cases of sacro-iliac diastasis which have come to our knowledge, than to endeavour to build up a general history for which sufficient materials are still wanting. Besides the five preceding cases, those cited by authors are: 1st. That of Philippi, surgeon at Chartres, recorded in the fourth volume of the "Mémoires de l'Académie de Chirurgie." 2d. Another, but very doubtful one, as to the nature of the disease, reported by Bassius, in 1731, in the same volume. The affection was, probably, nothing more than what is commonly called a strain of the loins. 3d. The case observed by Enaux, Hoin, and Chaussier, inserted in the "Recueil des Mémoires de l'Académie de Dijon," in which the weight of the limb, while the patient walked with crutches, acted so as to produce reduction, and to cure the shortening which was manifest at first. 4th. A case reported by L'Héritier, in which, after a fall, the ilium presented an extreme mobility on the sacrum. 5th. The example cited by M. Larrey of a soldier, in whom the shock of a spent bullet had produced a similar displacement. 6th. A case published by Mr. Harris, in the "Journal of the Medical and Physical Sciences of Philadelphia," vol. xiv. 7th. A fact reported by Mr. Braket, where, at the same time, the symphysis pubis was disjoined, as proved by the autopsy. (Transactions of the Medical and Physical Society of Calcutta, and Gazette Médicale de Paris, 1833, p. 52.) 8th. Two cases by M. Heidenreich. (Gazette Médicale, 1839, p. 634.) Very interesting to consult, since in both the diagnosis was not free from doubt.

This recapitulation, which we have made as complete as possible, may be useful to those who are desirous of studying the whole of this subject, the history of which classical authors have barely sketched.

## SECT. II.—THE NATURE AND CAUSES OF SURGICAL DISEASES.

ART. 53.—*Fatal Results from Fracture of the Nasal Bones.* By J. H. ROGERS, ESQ.  
(*Lancet*, April 24, 1847, p. 429.)

[After the following remarks, Mr. Rogers gives the details of four cases of fracture of the nasal bones, treated at the Middlesex Hospital, three of which terminated in death.]

The nose, from its exposed position, is not unfrequently injured by blows or falls, the cartilages being separated from the bones, or the bones themselves fractured. Although fracture of the nasal bones, being necessarily the result of direct violence, is generally attended by considerable tumefaction and disfigurement from effusion of blood, it is seldom that any serious consequences result from such an accident. Occasionally, however, it happens that blows on this organ, which may perhaps have occasioned but slight external injury, are followed by symptoms indicative of inflammation of the brain, or of its investing membranes. This arises from the connection between the septum of the nose and that portion of the floor of the skull formed by the cribriform plate of the ethmoid bone. A blow on the nose may force up the septum, and fracture this delicate plate of bone. The possibility of such an occurrence is alluded to by most systematic writers on surgery, but is usually spoken of rather as an accident which might happen, than as one which is likely to be met with in practice. Within the last few months, four cases of injury of the face, with fracture of the nasal bones, have been admitted into the Middlesex Hospital. Three of these have terminated fatally, from inflammation of the membranes of the brain; and in all there was found fracture of the cribriform plate of the ethmoid bone. In two of these fatal cases, the visible injury done to the nose was so trifling that fracture of the ossa nasi was not suspected during life. The danger in these cases is not to be estimated by the amount of external injury. It is dependent not on the degree of force pro-



ducing the injury, but on the direction in which that force is applied. The nose may be completely crushed by a blow acting laterally or from above, and the cribriform plate escape uninjured, but a much slighter blow, so applied as to drive the septum directly upwards, may fracture the cribriform plate from which it depends, and the result may be death from inflammation of the membranes of the brain. It is probable that accidents of this kind are much more frequent than is generally suspected, as, from the nature of the lesion it is very likely to be overlooked in the hurried manner in which post-mortem examinations are frequently conducted.

[Chelius states that fractures of the bones may be accompanied with symptoms of pressure or concussion of the brain, which depend on the propagation of the violence to the brain, and not on the pressing in of the walls of the nose, or of the cribriform plate.—South's Chelius, vol. i. p. 526.]

ART. 54.—*Dislocation of the Sixth Cervical Vertebra on the Seventh.*

By M. CARASSUS.

(*Gazette Méd. de Paris*, 27 Mars, 1847, p. 239.)

A mason, aged 44, was taken to the Hôtel Dieu, at five o'clock in the evening of July 6th, 1846; he had fallen from a first floor on the upper part of his back, and remained where he fell, immovable. His head was bent forwards, and his neck, as it were, sunk. On a level with the sixth cervical vertebra there was a bony tumour of the size of an almond. There was neither ecchymosis nor mobility, nor crepitus, nor lesion of the skin. The patient felt great pain in the part, which was increased upon pressure. Respiration was performed solely by the diaphragm. The lower limbs were completely deprived of sensation and mobility; the upper limbs maintained their functions in a slight degree. The mental faculties were intact, pulse feeble and frequent, extremities rather cold. On the following morning he was in the same state; the bladder was paralysed. Death occurred thirty-four hours after the accident.

*Autopsy.*—Sanguineous infiltration of the soft parts between the skin and the spine. The spinous process of the sixth cervical vertebra was separated from that of the seventh by a hollow, into which the finger could be introduced, and touch the cord. The two vertebræ were completely dislocated; they were separated in such a manner that the spinous process of the sixth presented forwards and upwards, while that of the seventh was curved downwards and backwards. The articular processes had also lost their contact, and in separating had followed inverse directions. Thus those of the sixth vertebra were carried forwards by gliding from below upwards; those of the seventh had, on the contrary, taken an opposite course. There was no fracture, except of the left transverse process of the sixth vertebra, which was only broken at the edge.

The cellular tissue exterior to the dura mater in the spinal canal was much infiltrated with blood; the posterior face of the cord presented a contused surface, about a centimeter square, corresponding with the space comprised between the spinous processes of the two dislocated vertebræ; it was softened and had a bluish aspect. Nothing of this kind was observed on the anterior surface. The fibro-cartilage which unites the bodies of the sixth and seventh cervical vertebræ was divided into two parts of nearly equal thickness, one of which remained united to the superior and the other to the inferior vertebra. The body of the sixth projected from before backwards, so as to compress the cord in this direction.

ART. 55.—*On the Influence of Gravity and a Decumbent Position on the Circulation and on Surgical Diseases.* Read at the Royal Academy of Medicine, May 25th, 1847. By P. M. GERDY, Surgeon to l'Hôpital de la Charité.

(*Revue Méd.-Chirurg. de Paris*, Juin, 1847, p. 332. *Condensed.*)

This paper contains many general principles, the rigorous deduction from special facts which I have observed a great number of times, although I recite instances only.

The weight of the fluids which circulate in the animal economy arrests their course, retains them, and causes them to accumulate in the inferior parts of the

body, and especially in the limbs, even during the most perfect health—this constitutes hypostasis. Thus the hands and the feet become congested, swollen and red, when they are at rest in a decumbent position; on the contrary, they become pale, cold and diminish in volume, if kept in an elevated position. The extent of the influence of the weight of the fluids, or of the decumbent position of parts in the production and aggravation of many diseases is still unknown. The effects produced are—1. Simple neuralgias, headaches, and hemicranias. 2. Serous infiltrations. 3. Sanguineous congestions. 4. Migrations of ecchymoses, which find the lowest level. 5. Hemorrhages. 6. Varicose dilatations of the veins. 7. Chronic inflammations, fungous ulcerations, superficial or deep. 8. Ulcers of the limbs. 9. Acute inflammations, known under the terms panaris, diffuse phlegmon, phlegmonous erysipelas. Gravity frequently acts only as the predisposing cause, but sometimes as the exciting cause.

1st. The position of the head when bent for a long time during any labour is sufficient to occasion considerable headache, or to increase it. Lying in a horizontal position too long will produce this effect. This kind of headache is always the result of sanguineous congestion, produced under the influence of gravity, which retains the blood in this part; in this instance it is the exciting cause.

2d. Gravity alone cannot produce an aqueous infiltration into decumbent parts; but obstacles to the return of the blood to the heart predispose the decumbent parts to infiltration, and the upright position does not fail to excite it. The influence is so great that, on assuming a horizontal position, œdema of the limbs will disappear in from twelve to twenty-four hours. The effect is still more marked when, the patient being in that position, the limbs are placed on a plane inclined upwards. But by raising the lower limbs the œdema is transported to the commencement of the thighs, the hips, and the exterior of the pelvis; by raising the superior extremities, to the arms, the arm-pits and shoulders. Other phenomena which deserve great attention frequently occur in the head, chest, digestive organs, and abdomen. The head becomes dull, sometimes painful; the patient often experiences giddiness, dimness of sight, noise in the ears, suffusions in the face, which indicate sanguineous congestion in the head, and threaten cerebral hemorrhage; the respiration becomes hurried, and effusions into the chest are found on percussion; the appetite fails; sometimes the mouth becomes foul; the abdomen swells, and effusion manifests itself there.

If, at the onset of these symptoms, the limbs are replaced horizontally, or are somewhat inclined downwards, the effects disappear as they came, but it is often necessary to ensure this by resorting to purgatives, bleeding, and other measures.

3d. It is not only in cases of obstruction to the circulation, in diseases of the heart and abdomen, that œdema is produced by a decumbent position, it occurs also in convalescence from long-continued disease; in individuals who have remained forty days in bed for a fracture or diseased spine, for instance. It is sometimes observed eight or ten days after any disease, when the patient begins to walk about, but this kind of œdema generally passes off in a few days. In these cases it would appear that the capillaries have lost the habit of resisting the weight of the blood in the venous columns, and that they gradually recover it by exercise.

The weight of the fluids exercises an influence also in dropsies, properly so called. Thus the effusion consecutive to an operation for hydrocele by injection resists the cure as long as the patient rises from bed, but this may be obtained by absolute rest. The same thing occurs in effusions into the knee-joint, which resist treatment in patients who move about, and are cured by absolute rest.

For the same reason that a decumbent position of any particular part produces serous congestion, it also occasions sanguineous congestions. Headaches and hemicranias are thus produced by congestions in the head. In this manner, also, congestions in the hands and feet are produced.

4th. Under the influence of a contusion, by which the capillary vessels have been broken, and in scurvy, the blood escapes from the capillary vessels, expands in the cellular tissue, and produces ecchymosis, black and violet spots, &c. If the effusion take place in an elevated part, the blood diffuses itself in the parts below by imbibition, and gradually to a greater or less distance, according to the laxity of the cellular tissue; thus in contusions of the head the blood extends itself to the eyelids, behind the ears, and to the neck, and in these situations, when it

stops, ecchymoses are almost exclusively seen; in contusions of the upper part of the trunk ecchymoses extend to the pelvis; in those of the anterior part of the chest they occur on the ribs, and behind, if the patient lies on his back; in those of the shoulders and upper parts of the arms, they extend to the elbow, and of the fold of the arm to the wrist; in those of the hips and upper part of the thigh, over the whole length of the thigh, &c.

5th. In chronic congestions of the uterus, in polypus and carcinoma of this organ, ulcerations, hemorrhoids, ulcers of the legs—the upright attitude and walking, by placing all these parts in an inferior position, occasion repeated hemorrhages. On the same principle, lying horizontally, and especially with the affected parts elevated, suffices to ward off hemorrhages, and to cure the predisposition which has favoured them.

6th. The same cause produces varicose enlargements of the veins and capillaries, the foundation of hemorrhoids, &c. There are two anatomical circumstances to account for the veins of the feet, although belonging to the most dependent parts, not becoming dilated from this cause: first, they are much more numerous than those of the legs, the column of blood is sustained by a much greater number of vessels, so that the resistance is much more disseminated; secondly, each vein resists the weight of the blood, proportionably as it is small, since its coats are proportionally thicker, as compared with its cavity. There can be no doubt that if the elevated position could be sustained for a sufficient length of time the result would be a cure of these incurable affections.

7th. We have seen that the inclined and dependent position of parts is sufficient to occasion sanguineous congestions; in the long run, the same cause, co-operating with these mechanical and passive congestions, terminate by producing—true inflammations, which occur in certain parts without blows or external violence, but more certainly still under the influence of violence—puriform secretions at the neck of the uterus—or fungous ulcerations, with sanious, sanguinolent secretions; such, for the most part, is the origin of puriform, whitish, and sanguinolent discharges, ulcerations and fungosities of the neck of the uterus, and fungous ulcerations of the legs. These affections are singularly relieved, and frequently cured, solely by a horizontal position persisted in for a sufficient length of time.

8th. Nevertheless, the greater number of ulcerations of the legs do not depend upon position alone. The latter is only a predisposing cause. Even varices, which so frequently complicate ulcers, act as a predisposition only in most cases. The most frequent exciting cause of ulcers is a blow, followed by ulceration and suppuration, or a wound, however small it may be. But these causes alone will be insufficient to produce an ulcer having no tendency towards a cure, and the patient would be soon cured if he maintained a horizontal position, especially with the legs raised. The influence of a dependent position, or the action of the weight of the blood, is absolutely essential for a wounded part to become congested, and that the lesion may become an ulcer, which ulcerous inflammation is most frequently subacute or chronic.

9th. The inflammation is frequently acute, and leads to mutilation or death, and, singular to say, the principal cause of these terrible affections and the true principles of their treatment are nearly altogether forgotten. The dependent position so aggravates the slightest cases of physical lesion—contusions, abrasions, the pricks of pins and needles, of the lancet at the fold of the arm, of the fingers, of the veins at the malleoli, the cutting of corns—producing, as complications, erysipelatous or phlegmonous inflammations, lymphitis, phlebitis, which affections it also aggravates, that we believe we shall render an immense service to science and humanity by putting this important truth in the clearest light.

Patients constantly enter our hospitals for enormous inflammatory, red, hot, shining swellings of the hands and feet, so little painful as to allow them still to work and move about. These are generally consequent upon slight wounds, and it frequently happens, when not sent to bed, that the inflammation continues to diffuse itself, and makes such progress in a few days that the patient is in the most dangerous state. He is then uselessly submitted to the most active, it may be to the most cruel antiphlogistic treatment, as, for instance, the multiplied incisions which are employed in these terrible diseases.

In reference to position as the cause of these affections, at least as many contu-



sions of the head and trunk as of the feet and hands are met with, but diffuse phlegmons or severe cellular inflammations rarely occur in the head and trunk, nor in the upper part of the limbs, while they are very frequent in the two inferior thirds of the latter.

Yet the cellular tissue is less abundant in the inferior parts of the extremities than in the trunk; but the extremities are almost always placed in a vertical direction, or in a dependent position; there is always a tendency to engorgement by the weight of the blood, which very rapidly accumulates in them under the influence of the slightest wound. Should it be objected that whitlows, or inflammations of the fingers, are attributable to the dense texture of these organs, it is possible that this circumstance may have some influence over the intensity of the pain, but nothing proves that the close adhesions of the skin to the subjacent fibrous tissue renders the inflammation more frequent. The fibrous tissue everywhere, except in the hands and feet, inflames with difficulty; the sheaths on the hands and feet often maintain a resistance in the midst of pus which "bathes and surrounds them." In the hairy scalp, where the skin is very vascular, and has a structure and connections analogous to those of the fingers, we see nothing analogous to whitlow. The sheaths of the tendons favoring the passage of pus in the palm of the hand, explains well the propagation of the inflammation to the palm. The same thing in the feet explains the same phenomenon, although more rare, but it does not explain the propagation of the inflammation and suppuration to the forearm and the leg, to which, however, they extend so frequently.

The fibrous sheaths of the muscles, in particular, explain much less the frequency and the gravity of cutaneous and cellular inflammations of the two inferior thirds of the extremities, inasmuch as the thighs, the shoulders, and the trunk have very strong sheaths, and here inflammations are much less common. Lastly, the intensity of erysipelato-phlegmonous inflammations, or diffuse phlegmons of the back, feet, hands, legs, and forearm, in consequence of a bleeding or slight wound, cannot be explained by the dense and resistant structure of the skin of these regions, since their skin, on the contrary, is very fine and loose, as is also the subjacent cellular tissue. There is but one cause common to these parts which can explain theoretically the serious character of the inflammations which occur in them, that is to say, their dependent situation which, with the weight of the blood, so manifestly promotes sanguineous hypostasis.

The most convincing proof that I can give of the influence of a dependent position on the inflammatory diseases attacking the two inferior thirds of the extremities, is the successful employment of therapeutical influences, which by their action are directly opposed to the weight which occasions these inflammations, to terminate by suppuration, ulceration, and death. When patients are received into the hospitals with the foot or leg, the hand or forearm swelled, red, hot, moderately painful, and tense, it is often sufficient to make them lie down and place the whole limb in a horizontal position, when the disease appears to be cured in twelve or fifteen hours, but it is necessary to be aware that it is not so; for if the patients are sent out of the hospital, as not being bad enough to occupy a bed for a longer time, they return some days afterwards with a diffuse phlegmon too severe to be arrested in its course.

When the disease is a little more advanced than in the first case the horizontal position of the limb alone is insufficient, but we may frequently obtain a cure in seven or eight days by placing the limb on an oblique plane rising so much the higher as the inflammatory symptoms are the more marked. In diffuse phlegmons of the hand I even suspend the hand vertically by the fingers, and in those of the forearm by the hand and the wrist, to the head of the bed. Under the influence of this powerful measure phlegmonous erysipelas becomes pale and cool, the limb diminishes 2, 4, 6 centimeters in circumference, and even more, in a few hours, the skin becomes loose and soft, the pain diminishes, and the inflammation subsides in a few days, for want of aliment to sustain it. I have, by this means alone, cured, in a durable and definitive manner, incipient and diffuse phlegmons in eight, ten, or twelve days, but to be sure that the cure is perfect, it is well to make the patient walk about for several hours the same day at intervals. If the redness, sensibility, or swelling do not return, the cure may be regarded as perfect. The patient should be advised to return only gradually to his usual occu-

pations, or even to keep the limb bound up for some days with a spiral bandage. In this way we have arrested a whitlow which has not allowed the patient to sleep for many days, and the first beneficial result has been return of sleep.

Lastly, I have frequently cured by this means alone ulcers of the legs, and I have seen some as large as the palm of the hand cicatrize in eight days, by the formation of a new membrane on all the points of the surface of the ulcer at once, and not by its gradual formation from the circumference to the centre.

If an elevated position is a curative means in the first stage of whitlow, phlegmonous erysipelas and diffuse inflammation of the extremities, it has not the same influence when the cellular tissue is softened, and suppuration has commenced, and especially later, when the cellular tissue is gangrenous, it is then only a useful adjuvant; but a skilful surgeon, applied to at the commencement of the disease, ought not to allow it to reach these grave and fatal periods. On the same principle, all those parts which an inferior and pendent position renders subject to the various affections mentioned in this paper, ought as much as possible, to be elevated, or at all events placed horizontally, when they are attacked by these complaints. It is a principle of general therapeutics which practitioners should constantly bear in mind, since it is not the result of mere supposition, more or less probable, but of the most rigorous deduction from a multitude of individual cases, and may be applied daily with success to a great number of different affections, as we have a hundred times demonstrated in our clinic at l'Hôpital de la Charité.

#### ART. 56.—*Punctiform Corneitis*. By Professor DESMARRES.

(*Traité Théorique et Pratique des Maladies des Yeux*, 1847, p. 271. Condensed.)

This disease is recognised with difficulty, and is most frequently confounded with an amblyopia, or an incipient congestive affection of the retina.

*Anatomical symptoms*.—From the commencement of the disease there may be seen at the centre of the cornea, if examined with much attention, a few small spots, or little grayish or bluish points of the size of a needle's point, which neither project nor are they depressed. The cornea where they are observed seems to have been pricked. Its transparency is preserved throughout, even between these little opaque spots, which sometimes appear to be situated on the external surface, and sometimes much deeper, under the laminæ of the cornea. Numerous observations lead me to think that their seat is always on one or other of the surfaces of the cornea, under the serous membranes, most frequently under the membrane of the aqueous humour: and in this case the disease is easily recognised by looking at the cornea sideways, the external lamellæ having retained their natural transparency. It is a disease commencing in the serous membrane, subsequently involving the proper tissue of the cornea, and propagating itself by the membrane of Descemet to the other serous membranes of the eye. These small points gradually increase in number and approach each other, and they become of a grayish or deeper bluish tint.

*Superficial punctiform corneitis*.—This is a less serious variety of the affection than the one presently to be described. The points under the conjunctiva, and before the pupil, are less numerous; but left to itself, the disease progresses and assumes all the characters, and entails all the consequences, of the deep-seated variety.

*Deep-seated punctiform corneitis*.—In addition to the points just described, this disease presents all the symptoms attributed to inflammation of the membrane of the aqueous humour (*aquo-capsulitis*). The points, more numerous than in the preceding variety, and of a deeper blue colour, are produced by inflammation of the proper tissue of the cornea, and rarely pass off by resolution. The cornea, examined from the side, is smooth, as in the first variety, and presents no opacity on its external surface; it is on the concave surface that the transparency is diminished. The small points frequently multiply so as to form a kind of very light bluish-gray cloud. With the aid of a glass there can be recognised transparent parts between the points, and these may be seen even with the naked eye: the remainder of the cornea assumes, especially in the vicinity of the points, a light greenish tint, as in general inflammations of this membrane: the iris appears a little dull and discoloured. The opaque points of deep-seated corneitis frequently

appear in iritis, especially when this affection is connected with syphilis. *Conjunctiva*.—The palpebral portion is never affected; the conjunctiva of the globe, near the cornea, when the affection is severe, assumes a pale rose tint, more marked as the inflammation progresses. *Sclerotics*.—When slightly injected around the cornea, the iris is beginning to be affected. *Iris*.—This should be carefully examined in the first stage of the disease. Its tissue becomes of a pale red tint, greenish, dull, and in all respects resembles the appearance observed in what is called serous iritis. The concentric fibres are more defined than usual. The inflammation, which begins in the serous covering on the posterior surface of the cornea, extends, by continuity, to the anterior surface of the iris; and it is in this point of view that the disease demands the most serious attention. Punctuated corneitis very rarely commences by inflammation of the iris. *Pupil*.—Almost always sluggish, since the light penetrates in smaller quantity, and the iris being affected with a certain degree of vascular turgescence, the pupil almost always contracts adhesions to the capsule; and in some cases, where the disease is severe, these multiply so that the whole margin becomes adherent posteriorly, and may lead to a complete obliteration of the pupil and loss of vision. *Membrane of the aqueous humour*.—This is evidently inflamed, as shown by the condition of the posterior surface of the cornea and the anterior surface of the iris. The whole anterior surface appears to be disturbed. The capsule is for a long period free from the inflammation, but ultimately becomes affected with whitish plastic exudations. *Jacob's membrane* participates less frequently in the affection. I have observed some cases wherein the retina, folded, yellowish, projecting into the vitreous body, and raised by a collection of fluid seated under the choroid, quavered in the bottom of the eye. The retina presents all the physiological signs of inflammation which occur in amblyopia, and even in amaurosis. Thus the disease is seated in the serous membranes of the eye, commencing by slight effusion in the form of points, sometimes on the anterior, and sometimes on the posterior surface of the cornea; after the serous membranes of the cornea, those which cover the anterior face of the iris, then the capsule of the lens, and ultimately Jacob's membrane, become the seat of inflammation, and, like inflammation of the pleura, this is accompanied with considerable liquid effusion.

*Physiological Symptoms*.—At the commencement, when the specks are but few, the patient complains only of a transparent cloud. Sometimes he describes the presence of muscæ volitantes, and then the affection is frequently mistaken for amblyopia; there is neither intolerance of light nor lachrymation. When the opaque spots increase there is more disturbance of vision. By degrees the patient becomes myopic, and the sight so far defective that he cannot guide himself. When the iris becomes inflamed intolerance of light occurs, the eye becomes red in all the parts mentioned, and there is slight lachrymation.

*Progress—Duration*.—The disease is in general extremely insidious; for some time all the symptoms are referable to the opaque spots. When the conjunctival surface only is affected, it generally proceeds more rapidly to resolution, but when it begins in, or is propagated to the aqueous humour, it takes an extremely long period, under any circumstances, to attain this. I have a case of three years' standing, which nothing has hitherto been able to arrest in its course; the left eye is completely lost in consequence of the obstruction of the pupil; there are now thirty opaque points in the cornea, which still maintains all its healthy transparency, except at its inferior part: large adhesions between the iris and the capsule exist in the right eye; the retina has suffered remarkably. If I had not kept the pupil dilated with belladonna, it would by this time have been obliterated; nothing has succeeded in curing this rebellious disease.

*Etiology*.—The causes are numerous. Certain constitutions appear to be more predisposed to it than others, especially serofulous individuals, or those in an habitually bad state of health. It is rare that it does not occur in iritis in subjects affected with syphilis, and it is often met with after depression of a cataract, the lens acting as a foreign body, it then becomes a case of chronic internal ophthalmia.

*Treatment*. 1. *Local*.—When the disease proceeds slowly, and is limited to the external surface of the cornea, local excitants sometimes succeed well, such as laudanum, precipitate ointment, and astringent collyria instilled into the eye for a



few hours, and abandoned as soon as they produce a sufficient degree of excitement. Blisters round the orbit, renewed every two days, and when the iris is becoming slowly affected, superficial moxas to the forehead are very useful. Belladonna must be employed early, and continued with perseverance as long as the freedom of the pupil is threatened. In some aggravated cases a seton in the neck has appeared to be useful. In the acute stage leeches may be applied to the temple; but this remedy must not be abused: the kind of constitution in which the disease occurs must not be forgotten.

2. *General treatment.*—Bleeding at the arm has never appeared to do any good, and is even dangerous. As soon as a few saline purgatives, the moderate application of leeches and mercurialized belladonna frictions have diminished the sub-inflammation of the internal membranes, and the pupil is dilated, a general tonic treatment is to be prescribed, including quinine, senega root, iron, beef-tea, and a little generous wine. The patient should be placed under the best possible hygienic conditions. In females, more particularly, anemia accompanies punctiform keratitis, and requires the prompt and effectual administration of ferruginous medicines.

ART. 57.—*Unusual Injury of the Knee—Comminuted Fracture immediately below the head of the Fibula, and partial Dislocation (!) of the head of the Tibia backwards.* By T. B. EDWARDS, Esq. Berehaven.

(*Prov. Med. and Surg. Journal*, July 7, 1847, p. 5.)

I was called, on the 28th of April last, to visit Daniel Oweng of Ballydanigan, who, in the early part of the morning, received an injury from the falling of a bank on his left knee and leg. Having made an examination of the injured part, I found the knee-joint considerably swollen, evidently from synovia being effused; though not very painful on pressure. Where he complained most was just corresponding to the head of the fibula, on which was a soft elastic tumour, which appeared to communicate with the joint. On a further examination, a comminuted fracture of the fibula, about *half an inch below its head*, was readily detected. From his own statement, I should rather think there must have been also a partial dislocation of the tibia backwards, and the fracture may have occurred coetaneously with, or subsequently to it. His statement is as follows: That whilst at work with a pick, about twelve fathoms under ground, his body being flexed upon the pelvis at the time, he was alarmed at receiving a blow with a stone on the back from above. Taking this as a symptom of what was likely to follow, he immediately attempted to jump backwards out of danger, as he thought, but before he could attain the wished-for object, and whilst the body was inclined *backwards*, he was overtaken by the rest of the bank, which struck him on the knee, and prostrated him. His lower extremities were nearly covered with earth and stones, but the thigh of the injured side was free. In endeavouring to extricate himself (for he was alone at the time) he encircled the lower part of the free thigh with both his hands, and whilst so doing he felt a *hard lump* in the ham. He then tried to release his leg by making extension from the thigh, and whilst thus engaged (the heap of earth, &c. on the leg acting as a natural counter-extension power, I presume.) he heard a loud snap, and the swelling in the ham *immediately* disappeared.

ART. 58.—*Subluxation of the Humerus Forwards and Inwards.*

By C. H. HALLETT, Esq., Demonstrator of Anatomy in the University of Edinburgh.

(*Condensed from the Month. Journ. of Med. Science*, Aug. 1847, p. 91.)

It is my intention to detail, in this notice, the different circumstances connected with partial dislocation of the humerus forwards and inwards, two examples of which have been examined in the dissecting-room of the university. The morbid appearances and general characters of this subluxation are unnoticed in the works especially devoted to the consideration of such injuries, probably on account of its not having yet attracted attention. A well-marked instance of it was met with, about three months since, in the right upper extremity of a man who had been evidently possessed of great muscular strength during his lifetime. I found the

lesions in the parts about the shoulder-joint to differ greatly from any I had previously read of. A precisely similar state of matters had been previously observed in the dissecting-room, and a preparation of the parts concerned in the lesion had been placed in the anatomical museum.

The articulating surface of the head of the humerus was displaced entirely from the glenoid cavity of the scapula, was thrown forwards by extreme rotation outwards of the arm, and was driven inwards so as to overhang and project into the subscapular fossa, and to cause the protrusion forwards of the anterior wall of the axilla. The head of the humerus was prevented from gliding in the glenoid cavity during the execution of any of the movements of the limb in consequence of striking changes in its form. A large segment of bone had been removed from the external and posterior part of the head of the humerus, and from that portion of the anatomical neck which intervenes between the head and the greater tuberosity. More than half an inch had been ground down or absorbed to the level of the shaft, and this had been so regularly and evenly performed, that it appeared rather to have been affected by mechanical means, as by a saw applied at first longitudinally, and then transversely, through the whole depth of the head of the bone, so as to remove a prismatic portion of it, than by the increased action of the absorbents induced by constant attrition of the anterior lip of the glenoid cavity against the anatomical neck and head of the humerus. The whole of the depressed surface was covered with cartilage, and presented here and there a number of grooves of a brownish colour, where the cartilage was apparently deficient. These grooves indicated so many places in which the absorbing action was exerting its influence in removing the bone immediately before the individual expired.

The loss of this portion of bone had caused a material alteration in the configuration of the head. It no longer possessed its rounded hemispherical form, but had become irregularly ovoidal. The head of the bone appeared at first sight to have been considerably elongated, and this elongation seemed to have caused the alteration in its shape; but, on closer examination, the appearances were found to be deceptive. A large depression, therefore, existed on the inner and posterior part of the humerus; this depression presenting two surfaces, one longitudinal, which impinged against the anterior smooth surface of the neck of the scapula, the other transverse, which rested on the anterior half of the glenoid cavity, the corresponding lip of which was received into the angle formed by the meeting of these two surfaces. The glenoid cavity had not escaped from the effects of attrition, for that portion of the anterior lip which projects somewhat into the axilla, and is the strongest part of the cavity, had been absorbed, and thus reduced to the level of the surface of the neck. I might briefly state, that the glenoid cavity in a perfect scapula is somewhat pyriform, that its inferior two-thirds represent a segment of a circle, whilst the superior third is a segment of an ellipse. Now in both the cases I have examined, the projecting border of the circular portion had been removed and brought on a level with the ellipsoid portion, so that the glenoid cavity and the neck of the scapula had an elliptical form, which appeared, like the change in the form of the head of the humerus, to have arisen from an increase of their longitudinal diameter: but I found from admeasurements that this diameter was not increased—that it bore its usual relation to the size of the scapula. Besides these, some other changes require to be mentioned. The greater tuberosity of the humerus was situated in the posterior half of the glenoid cavity. It had its form altered in such a manner as to permit it to perform the movements which the joint, in its existing state, would admit of. The three surfaces into which the supraspinatus, infra-spinatus, and teres minor muscles are inserted, were all merged into one smooth surface, covered by the tendons of these muscles. The lower part of this surface, which projected somewhat from the upper, chiefly occupied the glenoid cavity.

There was no effusion of blood in or around the shoulder-joint: no abnormal development of ligamentous tissue, nor any other change but such as I have mentioned, external to the joint. The lower portion of the capsular ligament of the joint, which had not the slightest appearance of having been ruptured, was united to the apparently thickened tendon of the subscapularis muscle, and with

it supported the head of the humerus as in a sling, and bound the greater tuberosity firmly down to the glenoid cavity.

Such are the morbid appearances and alterations seen in and about the two joints I have carefully examined. Rotation, circumduction, and abduction were all in abeyance; adduction was imperfectly performed, and flexion and extension were the only movements that could be executed by the limb in anything approaching the normal way. The position and changes in the muscles, and the manner in which the glenoid cavity and the head of the humerus were locked together, united to cause this paucity of motion. Thus the arm could not be rotated inwards, because the longitudinal surface of the depression on the head of the humerus abutted immediately against the neck of the scapula, and controlled all motion in that direction. The attempt to rotate outwards was equally ineffectual, for the subscapularis and pectoralis major muscles were already too much stretched to permit the external rotatory muscles to act efficiently: circumduction, depending on the power of moving the limb freely in every direction, could not be performed for the same reasons; every attempt at abduction was successfully resisted by the subscapularis, pectoralis major, and by the longitudinal surface of the depression on the head of the humerus. The other movements, not being restricted or controlled in any way, took place for the most part in the usual manner. It is to the power of flexing and extending the limb whilst the other movements were imperfect, that we must refer the production of the depression on the head of the humerus.

The deformity occasioned by this form of subluxation greatly resembles that induced by complete dislocation forwards of the humerus. The acromion process was prominent and angular; and the deltoid muscle was flattened, whilst the anterior wall of the axilla was rendered prominent by the head of the humerus pushing it forwards—characters also peculiar to the dislocation forwards. Indeed, on comparing casts of these two dislocations, it was found that the external characters about the shoulder were so similar, and corresponded so closely, that it would be impossible to distinguish them at first sight. The surgeon, however, would have no difficulty in recognising this subluxation, since, on placing his fingers in the axilla, he would discover the head of the humerus in the immediate vicinity of the glenoid cavity, the borders of which he would be unable to feel; moreover, he would find the limb everted to a great extent, the hand and arm being turned from the body and looking outwards, whilst the elbow was placed against the hip, and would be unable to rotate it inwards, provided the displacement had been of long standing. The deformity also resembles that occasioned by partial dislocation forwards of the humerus, but the circumstances of the limb being everted, and of flexion being perfectly performed in the subluxation forwards and inwards, will point out the means of distinguishing them.

A blow, or a fall, insufficient to cause complete luxation of the head of the humerus, might still be accompanied with sufficient force to drive it into the abnormal position it was found to occupy in these two cases. I have no doubt that the displacement may be caused by direct injury, but I am also led to believe that it might originate in another manner. There is a trial of strength performed in Scotland, and, I believe, in Scotland only, which those who practise it designate by the unmeaning phrase of "putting you down." It consists in two individuals seating themselves opposite each other, joining their right hands together in a peculiar manner, closely approximating and fixing their elbows on a table, or any other stationary object, and then attempting to twist each other's arms down to the object on which their elbows rest; the individual who can twist outwards his antagonist's arm in this amicable manner into the required position being declared the victor. Now I conceive that this trial of strength may induce subluxation of the humerus forwards and inwards. During its performance all the muscles of the arm and shoulder are violently and continuously contracted. If the arm should then be suddenly and violently rotated outwards and extended, we might expect that the muscles so suddenly stretched would suffer considerable injury. I believe that the subscapularis and pectoralis major muscles might be rendered inert by this violent over-extension, and that these muscles being inactive and the force being continued, the head of the humerus might be readily displaced. The head of the humerus can certainly be thrown into the abnormal position before described by



rotating the arm suddenly outwards, after the pectoralis major and the subscapularis muscles have been detached from their humeral attachment. I have tried the experiment several times in the dissecting-room, and have never failed to displace the head of the humerus from the glenoid cavity, and to twist the greater tuberosity into it, without rupture of the capsular ligament. We have only to presume that this can be done, under certain circumstances, in the living body, and we have all the conditions necessary to induce the deformity and the changes observed in the articulating surfaces of the shoulder-joint.

Little can be said about the treatment to be adopted by the surgeon, for the restoration of the perfect use of the limb, if he should chance to meet with a case of this subluxation in a living individual. The luxation may be reduced by lifting the head of the humerus out of its abnormal position by the aid of a towel, the arm being rotated inwards and carried across the trunk; and when reduced, might be treated according to the common principles of surgery, although it is more than probable that the displacement would remain permanent, in consequence of the changes in the joint, unless it came under the notice of the surgeon at an early period.

Before concluding this imperfect notice, I would remark, that whilst the opinion I have advanced respecting the cause of this subluxation is purely hypothetical, the changes induced by it, and the characters by which it may be recognised, are taken from direct observation made on two well-marked cases. My only intention in recording these observations, is to bring under the notice of the surgeon the existence of, and the character by which he may distinguish this subluxation of the humerus, and under the notice of the surgical pathologist, the occasional existence of lesions in the articulating surfaces of the bones entering into the formation of the shoulder-joint, which have been hitherto undescribed.

ART. 59.—*On the Nature and Causes of Simple Lateral Curvature of the Spine.*

By EDWARD F. LONSDALE, Esq.

(Condensed from the Author's *Observations on the Treatment of Lateral Curvature of the Spine*, 1847.)

[After remarking that simple lateral curvature unaccompanied with disease of the bones or ligaments is a very common affection, and may be said to be almost peculiar to females, and that it is almost always found to be on the right side, the concavity of the bend facing to the left, Mr. Lonsdale illustrates the affection by the following very simple and very common example.]

A girl at her needle sits for hours together with the head hanging forwards; the left arm is but little used, and drags the shoulder of this side downwards, and tends to make the chest of the left side contracted by weighing and pressing on the ribs; the muscles of this side of the body are not called into action, therefore one-half of the trunk is comparatively passive. The reverse taking place on the opposite or right side of the body, the right arm is in constant use, being principally employed in a position before the chest, the weight of the upper extremity is taken off the ribs, both by the pectoral muscles as well as by those muscles which raise the clavicle and scapula. These circumstances favour the curvature of the spine to the right side in two ways: first, they increase the expansion of the right side of the chest, by giving freer motion to the ribs; and, secondly, the left side becomes gradually more contracted, owing to the dead weight which is thrown upon it from the arm being so little used and constantly dependent. Combined with these, there is another and internal cause acting, viz., the greater expansion of the lung on the right than on the left side, owing to the pressure on the ribs; and this is very important where the above position is continued for a length of time; for although it may act but slightly at first, it will tell in an increased ratio when the two sides of the chest become materially altered in size, for the less respiration there may be in the left cavity of the chest, the greater duty the right lung will have to perform, and necessarily increase the expansion or convexity of the ribs, and the convexity of the spine, at the same time, on the right side, which is the curvature now under consideration. If this be a correct explanation of the manner in which the curvature may sometimes commence, it is easy to see how, when once begun, it may go on rapidly increasing till those

frightful deformities are produced which are so often met with, where we find the ribs on the left side so much compressed that but little air can enter the lung, and the heart itself becomes pushed to the right side of the sternum; in fact, almost the whole function of respiration is performed by the right lung in these extreme cases of deformity, or if by the left at all, it is pushed completely over to the right of the median line of the body. The irregular expansion of the lungs in the two sides of the chest has rarely, if ever, been before advanced as a cause tending to produce or to increase the curvature after it has once commenced. That the want of expansion in one lung, and consequently of the ribs of the same side, is a cause sufficient to destroy the natural balance of the spine, is seen in cases of collection of fluid within the chest, in empyema, or hydrothorax, where, if the patient survive the disease after the evacuation or absorption of the fluid, and the lung do not recover itself, the ribs become contracted on this side, and the spine is thrown over to the opposite, causing a curvature in that direction.

The principal causes of the lateral curvature of the spine may be stated under three heads, viz.: 1st. The predisposing causes. 2d. The proximate or immediate causes. 3d. The superadded causes, increasing the curvature when once commenced.

*The predisposing causes* are, general debility of the system, producing weakness of the muscles and ligaments, showing itself more readily in the spine than other parts of the body, owing to the peculiar structure of the vertebral column and to the great weight it has to support, which render it liable to be easily thrown out of its natural erect line. The difference of the pressure internally on the two sides of the thorax against the inner side of the ribs, the left lung containing less air than the right, being smaller in size, while the ribs on the right side receive support also from the liver being pressed against them, give a predisposition to use the right upper extremity rather than the left.

*The proximate or immediate causes* are, any position which throws the spine out of its natural line continued for a length of time, without there being active muscular exercise employed in the intervals to redress any deviation that may have been produced. Sedentary occupations, in which the right arm is used more than the left, whether at needlework, reading, writing, or drawing at a desk or table, while the right elbow is supported and the scapula thrown upwards, at the same time that all the weight is taken off the right side of the chest, and its expansion allowed to be more free, during which the head is thrown to the left side, the left arm is allowed to hang at a lower level, is little used, causing a dead weight to press against the ribs, as well as the position itself throwing the central or dorsal portion of the spinal column over to the right side, and causing a convexity on the left.

Carrying children, or standing constantly in a position which throws the weight of the body more on the left leg than on the right, will bring more strain on the lower or lumbar portion of the spine, and cause the mechanical weight of the head and shoulders to bear the central or dorsal portion towards the right rather than the left side. Finally, tight lacing, or, without being tight, an unnatural degree of pressure by stays, or whatever the nature of the dress may be, when exercised against the ribs and spine while the girl is young and growing, will, for the reasons already given, namely, the less resistance of the lung on the left side, as well as the support the right side of the chest receives from the liver, combined with the increased strength and more constant use of the right arm, be a sufficient cause in many cases to commence the curvature, and in most to increase it.

*The superadded or increasing causes* are, the mechanical weight of the head and upper extremities, which tend daily and hourly to throw the spine more out of the perpendicular line when the curvature has once commenced. Awkward positions, both in sitting and standing, which are now employed by the girl to give herself relief, as well as being instinctively prompted to do so to balance the trunk, and unconsciously to compensate for the absence of the erect condition of the vertebral column, and so to preserve the centre of gravity, which unfortunately does but at the same time greatly increase the curvature. Lastly, the muscles of the back themselves, continuing to act in a straight line from the upper to the lower part of the spine, tend greatly to increase the curve, more particularly the set of muscles on the left side, which draw the upper part of the spine towards the lower,

like a string acting upon a bow. The muscles, also, on the right side tend to increase the deformity, when there is a disposition for a second curve to be formed by the lumbar portion occupying a situation to the left of the median line, and in severe cases this portion of the muscles may partially ride over, or be completely displaced to the left side of the spinous processes of the lower vertebræ, placing them in a similar position, with regard to their line of action, to those proper to the left side itself, and acting in the same manner.

After the curvature has once commenced, the muscles situated on either side of the spine, whose natural action is to balance the vertebral column in the erect position, lose the power of so doing, and only tend to increase the curve, by approximating the upper end to the lower as soon as it is thrown out of the erect line; and both sets of muscles, namely, those on the convex as well as the concave side, will have this effect.

That the muscles on the convex side of the spine have not the power to redress the curve is evident, for they are always the strongest, and the most developed on the right side, and that, in spite of this, the deformity still goes on increasing on the left, and in many cases after those on the opposite or concave side have become so much wasted as to cease to have any power to act as antagonists.

[Mr. Lonsdale remarks that while the various causes are in operation which tend to throw the spine out of the perpendicular line, mechanically depressing the left side of the thorax, there are active causes existing on the right side, that tend to increase the curvature in the upper part of the dorsal region.] The right arm is in constant use; all those muscles that are comparatively passive on the left side are in a state of action on the right; the clavicle and scapula are raised by the action of the trapezius and sterno-mastoid muscles, and thus the weight and pressure produced by the upper extremity are taken off this part of the thorax. At the same time the scaleni muscles on this, the right side, are in strong action, and raising the upper ribs; for the above displacement of the two shoulders, viz. where the left drops while the right is elevated, cannot exist without there being a tendency for the head to fall to the left side. To counteract this, the scaleni muscles on the right side are put into strong action, which then keep the cervical vertebræ, and the ribs from falling, as before stated. The sterno-mastoid also produces the same effect, keeping the head erect, only it acts from the sternum and clavicle instead. Combined with these are the diaphragm and abdominal muscles, which I conceive may become powerful agents in increasing the deformity, by pulling the ribs downwards, acting more particularly on the left side, owing to the curvature of the spine favouring the influence of their action.

If the muscles be admitted as agents in producing, and more decidedly in increasing the curvature (which they must be), other muscles will also take part, and act upon the upper portion of the dorsal region, namely, the rhomboidei; for they being inserted into the base of the scapula, and their origin being from the lower cervical, and their larger portion also from the upper dorsal vertebræ, they will, when their antagonists on the left side are passive, tend to draw the vertebræ to which they are attached towards the scapula; since the scapula itself is thrown abnormally forward by the powerful muscles in front of the chest, as well as by the actual mechanical weight of the upper extremity being thrown to the side and front of the thorax.

In this, which may be called the first stage of the curvature, so little apparent deformity exists, that it is seldom noticed by either the girl or her friends; yet upon close examination the following difference in the two sides of the body will be observed. The level of the two shoulders will be found to be different, the left being lower than the right, though but slightly so; the scapula on the left side will be flatter, while the right is not only generally more raised and prominent, but is more so at one point than another, viz. its inferior angle; this part of the bone projects more than natural, depending, I believe, upon the whole scapula being raised so much, that its lower angle is removed from the embrace of the portion of the latissimus dorsi muscle, which ought to pass over it. This portion of the muscle, then, loses its hold upon the bone, and its lower end tilts upwards and backwards from the thorax.

[Admitting that stays are sometimes the cause of curvature, Mr. Lonsdale explains the circumstance of the curvature being so frequently on the right side as follows:]



The constriction produced by the pressure of tight stays must act more on the side where there is the less resistance, and this, as already stated, is the left; the consequence of which is, that the ribs of this side will become more compressed, and the capacity of the lung be also diminished.

[In illustration of the effect of the absence of support on the side of the spine on which the ribs are compressed, the author proceeds:]

Any long-continued position of the body, which places the spine under circumstances to bring the weight of the arms and head to bear more on one side than the other, will throw it out of its normal erect line, causing an unequal strain upon the ligaments, at the same time that the muscles of the back are but little brought into action; there is nothing, then, to oppose the mechanical weight acting unfavourably on the vertebral column, and the spine begins to yield laterally, at first only in a slight degree, but by long continuance soon increases to an extent that the weight of the head and shoulders, even by themselves, in the erect position, is sufficient to cause the curve to become more and more decided, though the girl may no longer be placed under the unfavourable circumstances of pressure from stays, or of remaining in the awkward position which at first caused the curvature to commence. The mischief has been done by the normal straight line of the spinal column having been destroyed.

It is position only which primarily throws the vertebral column out of the erect line, and it may be stated that any position *where the right arm is used more than the left*, the equipoising of the vertebral column being lost, will throw the spine to the right side, and will be sufficient, by long continuance, to lay the foundation for the lateral curvature.

There is a natural or an acquired disposition to use the right side of the body more than the left; I would almost say it is a natural one. Most people are what is called "right handed." All the muscles are more developed, and possess greater power on the right than on the left side of the body, more particularly those of the upper extremities. This is less marked in females than in males, for the simple reason that they are less employed in physical exercises or occupations which tend to increase the muscular development; but still, though less marked, this difference will be found to exist, both in the more frequent use of the right arm, as well as in its greater size.

ART. 60.—*Caries of the Superior Cervical Vertebrae, with Destruction of the Body of the Axis.—Syphilitic Rheumatism.*

(From the Proceedings of the Pathological Society of Dublin. The Dublin Quarterly Journal, August 1847, p. 232.)

Dr. Lees presented a recent specimen of disease of the upper cervical vertebrae, taken from the body of a man, æt. 35, admitted into the Meath Hospital on the 5th of March, 1845, with pains in all his bones, or, as he described it, "all over him." He stated that, eight months previously to his admission, he had been salivated by mercury for a venereal complaint; that soon afterwards he had accidentally fallen into a river, and that the pains from which he was now suffering had set in three months subsequently. He was not emaciated, the disease was considered to be syphilitic rheumatism, and he was directed to be treated with sarsaparilla and iodide of potassium. On the 8th he was observed to be very restless; his pulse was very quick, his respiration a little hurried, and he complained much of the pains in his chest, abdomen, and legs. On examination of the abdomen, Dr. Lees now discovered a tumour in the hepatic region, with tenderness to deep pressure applied in that situation, and which, he thought, was probably indicative of a subacute supervening on a chronic hepatitis. On the 9th the patient was much worse; in addition to his former symptoms, he had now paralysis of the lower extremities, and complete retention of urine. The urine, when drawn off, was very turbid, loaded with the lithates, and had an acid reaction. The patient on sitting up, supported his head with both hands; and he now mentioned that during the previous night he had a sensation of something giving way, or cracking, in his neck, and he felt pain in the place to which he referred this sensation. The back of the neck being carefully explored, a hard tumour, painful on pressure, was detected at the upper cervical vertebrae, close to the occipital articulation. In the pharynx no ulceration could be discovered, but only a patch of green mucus

on it. A consultation was held with Messrs. Porter and Smyly, who agreed that the case was one of caries of the cervical vertebræ. There was no paralytic affection of the upper extremities. On the night of Thursday, the 13th instant, the patient vomited, after which he again lay down in bed; and in the morning, at six o'clock, it was found that he had died quietly during the night.

A complete *post-mortem* examination could not be made, as the friends of the deceased insisted on removing the body a few hours after death on the same morning, but the cervical vertebræ were examined, and the parts obtained which Dr. Lees now produced. The second vertebra was enlarged, and this had caused the prominence felt at the back of the neck. Mr. Ledwick, who made the examination, observed that the periosteum, on its spinous process, was thickened, and very vascular. The odontoid process still preserved its natural relation to the atlas, but the body of the axis itself had disappeared, its right articulating process alone being visible anteriorly, and a mass of grumous matter occupying the situation of the bone which had been destroyed. On laying open the vertebral canal, the dura mater of the theca vertebralis was observed to be very vascular, as was also the pia mater of the medulla spinalis itself; the redness, in both cases, was shown to be persistent after washing. These appearances Dr. Lees demonstrated on the posterior aspect, and he then proceeded to point out the condition of the medulla spinalis: it appeared in this place to be softened in some degree, as compared with the lower portion of its course in the cervical region, but there was no trace of any pressure having been made on it. Dr. Lees having also pointed out the remarkable lesion already described on the anterior aspect of the vertebræ, remarked that this destruction of the bone could not be very recent, yet the patient had been walking about up to his admission into the hospital, only nine days before his death; he had, indeed, mentioned that, a month previously to his admission, a similar tumour had formed at the back of his neck, and that matter had been discharged from it, but no trace of this could be discovered, nor was there any cicatrix in that situation. It was to be regretted that, from the hurried manner of the examination, there was no opportunity of inspecting the condition of the brain.

Dr. Lees was of opinion that the immediate cause of death in this case was the displacement of the vertebræ in some sudden motion of the patient. He directed attention to the remarkable circumstance of there having been no paralysis of the upper extremities, while there was, on the contrary, complete paraplegia, with retention of urine, neither of which is usually referred to a lesion of the medulla spinalis in the cervical region. Sir B. Brodie, in a lecture at St. George's Hospital last year (1844), has referred to a paper by Dr. Baillie, in the "Transactions of the Royal College of Physicians, London," in which that eminent pathologist connects paraplegia with cerebral disease. Paraplegia has been often observed to be accompanied by cerebral symptoms. The late Dr. A. Colles (in his "Practical Observations on the Venereal Disease," p. 139) has given the case of a gentleman labouring under secondary syphilis, with an ulcer at the back of the pharynx, who coughed up a piece of bone, which "on examination proved to be a ring of the first vertebra, with on one side the half, and on the other one-third of the articulating processes," which had become carious, and was discharged through the ulcer, yet he recovered, and survived six years, during which he married and had children. On the authority of that case, we may therefore conclude that this lesion is not so absolutely incurable, so necessarily fatal as *a priori* might be supposed.

ART. 61.—*Case of Vertical or De Champ Dislocation of the Patella, with Observations.*  
By M. PAYEN, M. D.

(From a Report by A. Markwick, Esq. *The Medical Times*, July 24th, 1847, p. 431.)

This species of displacement, which was first described by Moscati, illustrated by two cases by Monteggia, called in question by Manne and Lévielle, considered impossible by Boyer, and which has been passed over in silence by Delpech, A. Cooper, Samuel Cooper, and Chelius, has been investigated by M. Malgaigne, in an excellent memoir, "*Sur la Détermination des Diverses Espèces de Luxations de la Rotule.*" M. Malgaigne mentions only eleven cases of *de champ* luxation, and gives the detail of eight. Since the publication of this Essay two other cases

have been met with—one at New York, by Mr. Watson, and the other at Pittsburgh, by M. Guzman.

Owing to its rarity the recital of another case may be interesting: M. D., a strong robust man, about 50 years of age, was walking on the snow on the 15th of last December, when his right foot slipped backwards, thereby giving to the body a rapid rotatory movement in the same direction. Being on the point of falling, M. D. seized the railings that were within his reach, and thus immediately arrested, for the upper part of the body, the impulsion, which expended itself on the lower extremities. The violent torsion he thus experienced occasioned him very acute pain in the right knee. It is quite certain that M. D. neither fell nor struck himself, as there were no marks upon the snow, and his clothes were not soiled. Persons came to his assistance, and supported him when he made a few steps to enter his house.

I was immediately sent for, and on my arrival found the leg slightly flexed upon the thigh, the knee extremely painful, and strangely deformed. The patella was placed edgewise, in front of the condyles of the femur, so that its external border from having become anterior, raised the skin; its cutaneous surface was directed inwards and *rather backwards*, and its articular surface outwards and *rather forwards*, while its internal edge rested firmly on the anterior part of the extremity of the femur, a little external to the middle line; the muscles of the thigh were powerfully contracted, the slightest movement was impossible, and every effort caused very great pain.

The patient having been placed in bed, with the limb resting on a mattress, I attempted to push the patella backwards by pressing the internal border from without inwards with my thumbs, whilst with the fingers I brought the external border from within outwards, but without success. I then flexed the thigh upon the pelvis, the leg being extended, as recommended by Valentine, and again tried, but with no better result. I then had recourse to the very rational method deduced by M. Malgaigne, from his researches, and which M. Coze had previously successfully employed in a case of *de champ* dislocation, viz. to forced flexion of the leg. But the first attempts occasioned such violent pain, and the contraction of the muscles of the thigh was so energetic, that I considered this mode as impracticable, and that I ought to abandon it, convinced from the reasons given by M. Malgaigne, that the difficulty of reduction in this case was owing to the angle of the patella being wedged in what he calls the *subcondylloid space*; and being unable to dislodge it by flexing the limb, I imagined that I might arrive at the same result by the opposite proceeding, that is, by causing the patella to ascend. To effect this, the limb being extended on the bed, I ordered the patient to raise his leg as much as possible, my fingers being at the same time so placed as to cause the patella to turn over. The patient obeyed, and made a sudden and violent effort: the patella yielded, and became somewhat raised, and then, with the combined assistance of my fingers, immediately reduced to its proper position. The knee immediately regained its shape, and was scarcely at all painful. The patient was ordered to keep in bed. During the first day the articulation was surrounded with compresses dipped in cold water. On the following day a swelling made its appearance on the inside of the knee, which gave the sensation of fluctuation. There was, however, no ecchymosis. On the seventh day the knee was restored to its ordinary size, and but little pain was felt on moving the patella from side to side. I surrounded the knee and the adjoining parts of the thigh and leg with a dextrined bandage, and the next day the patient was able to walk about on crutches.

On the twenty-sixth day I removed the bandage, and replaced it by a laced knee-cap. The patient was ordered to keep his room for a few days longer, and six weeks after the accident M. D. went out on foot with merely the aid of a stick. He is now quite recovered.

A few observations relative to this case may not be out of place.

1st. At the time when M. Malgaigne published his Essay, and from the facts which he had collected, we were justified in stating that the internal *de champ* luxations were more common than the external. The two cases of MM. Watson and Guzman, however, restored the equilibrium. Now, the one above related places the majority on the other side, that is, in favour of the external dislocations.



2d. Of the known cases of *de champ* luxation, those produced by mere muscular contraction are much more rare, since only two of the ten cases I have just related, one external and the other internal, are of this description. The one I have mentioned was external; and it seems rational to admit that the greatest number of dislocations of the patella, caused by muscular action alone, ought to take place in this direction, for it is to this side that the triceps tends to draw the bone, and we know that it is on this same side that what are called spontaneous luxations are always observed.

3d. The above case fully confirms M. Malgaigne's ideas as to the cause of the difficulty of the reduction, and it is evident that the proceeding adopted could succeed only by disengaging the angle of the patella from the subcondyloid space. As regards the mode of reduction, our case is very analogous to that of Monteggia (M. Malgaigne's sixteenth observation), in which the patella became spontaneously reduced during the efforts made by the patient in walking. In both cases the bone was dislodged from its wedged position by the same mechanism; we may therefore reasonably establish the precept, viz. to assist the reduction by making the patient stand up, or even by making him walk.

4th. As regards the facility of the reduction, our case holds an intermediate position between the extreme cases; and we may mention that, of the eight recorded by M. Malgaigne, the difficulty was so great in four, that in one, division of the muscles and of the ligamentum patellæ was resorted to without success; in two others the elevation was obliged to be employed; and that, in a fourth, the reduction was impossible. We may also add that, in the case of M. Guzman, the bone was not reduced till after the ligamentum patella had been divided, yet this division did not apparently facilitate the reduction.

5th. It has been said that the greater or less facility in the reduction depends on the cause of the displacement, and that the luxations of the patella produced by muscular contraction are more easy to reduce than others. May not this depend on the action of the muscles alone, not being, generally speaking, sufficient unless there is some anatomical disposition to favour the displacement; and which, consequently, facilitates the inverse route which the bone has to pass through in order to become reduced? Still I may remark that, in one case where M. Cournat was obliged to employ the elevator, the dislocation was occasioned by muscular contraction. However, notwithstanding that M. Malgaigne's opinion, as to the partial and spasmodic contractions of the triceps femoris being a cause of the luxation of the patella, is contested, I, nevertheless, entirely coincide with it; indeed it appears to me to be corroborated by the case we have related, for we cannot comprehend how there can be complete harmony of contraction in the inordinate and discordant movements above described. These isolated contractions of the muscular fibres appear to me incontestable; it is stated, in all our treatises on anatomy, that when the arm is raised, the anterior position of the deltoid contributes to carry it forwards, and the posterior portion backwards; the same, in fact, with numerous other muscles. We, therefore, see no difficulty in acknowledging the preponderating contraction of one portion of the triceps femoris as a cause of certain dislocations of the patella; and M. Malgaigne has very truly affirmed that the simultaneous action of all the muscles of a joint tend to consolidate and not to modify its relations.

6th. It has been stated that there may be some difficulty in ascertaining whether the *de champ* luxation is external or internal; in the above case no doubt could possibly exist; and the patella, evidently placed outside the middle line, pointed out very clearly the direction of the displacement. I am not aware that it is the same in every case, still the examination of the surfaces of the patella ought to be an indication, as it proved to be in our patient.

7th. As to the information said to be furnished by the extensor tendon and the ligamentum patella, the internal border of which, being more tense, indicating an internal luxation, and *vice versa*, we have endeavoured in vain to appreciate its value; the ligamentum patella, when forcibly stretched, did not present any distinct or appreciable border.

8th. Lastly, in the details I have given, I have mentioned that the surfaces of the patella had become placed not merely laterally, but that the posterior was external, and, at the same time, rather anterior; and the anterior internal, and a little

*posterior*. This disposition was sufficiently marked for me not to hesitate to admit the possibility of the *upside-down* luxation; and I am convinced that if M. D. had fallen on the knee after the displacement of the patella, this dislocation, in a more or less complete form, would have been the result.

[In South's "*Notes to Chelius*" it is briefly remarked that Coze's observations of a dislocation of the knee-cap, in which it was half twisted round itself, has been denied; and that Wolf has noticed a complete twisting round of the knee-cap. Vol. i. p. 805.]

### SECT. III.—TREATMENT OF SURGICAL DISEASES.

ART. 62.—*Cases Illustrating the Use of Ether in Surgical Operations.* By Dr. SNOW.

(*On the Inhalation of the Vapours of Ether*, 1847.)

1. *Operation for the Relief of Stricture in the Urethra, with Fistulous Openings, performed by Mr. LISTON.*—A gentleman, aged 49, whose health was much impaired by long illness and residence in the East Indies, had suffered for several years from stricture of the urethra, with fistulous openings in it. No catheter could be introduced, and none of his urine passed the natural way. On April 24, Mr. Liston performed an operation for his relief, which consisted in cutting into the urethra in the perineum. Mr. Thomas Morton, Mr. Emanuel Baker, the usual medical attendant of the patient, and Mr. Cadge were present. The patient having been bandaged as for lithotomy, began to inhale ether. He breathed steadily and pretty deeply, and became insensible without any excitement or struggling. In four minutes the eyes were turned rather upwards, and there was slight snoring. The operation was now commenced, and caused no sign of pain. It was concluded in seven minutes, during which he inhaled, at intervals, vapour more diluted than at first. Two or three minutes after the conclusion of the operation, he said a few words incoherently like a drunken man, but was not spoken to, and became silent again. Five minutes afterwards he spoke rationally, saying that he did not begin to feel any stupefying effects from the ether yet. The pulse was but little influenced throughout. After having been put into bed it was found that there was hemorrhage, and it became necessary to take up a small artery. He could not be got to lie still enough for it to be seized, so the ether was given again twenty minutes after he had recovered his consciousness; and for thirty-six minutes he was quite insensible, the eyes being turned up, and the respiration rather snoring; he was lifted up and some cushions placed under him, and he inhaled a little more vapour, and then the artery was secured as he lay quite motionless, and he recovered his consciousness a minute or two afterwards;  $\frac{3}{4}$ iv of ether were consumed on the first occasion, and  $\frac{3}{4}$ vj on the second. The temperature of the water-bath was  $67^{\circ}$ ; somewhat higher than Mr. Liston now employs.

Being situated at the patient's head I did not see the operation, and consequently could take no notice of it. It was successful in establishing the natural channel for the urine, and the fistulous openings gradually closed up. The patient had spectral illusions occasionally for a week or two after the operation, but was not alarmed by them, and did not mistake them for realities. He fancied they were caused by the ether; but they most likely depended on his weakly condition, for a time increased by the loss of blood during the operation. I have not heard of anything of the kind after ether in any other case.

2. *Lithotomy.*—Mr. Tatum performed lithotomy on Henry Hemson, aged 10 years, in good general health. In between two and three minutes after he began to inhale he was perfectly insensible, the eyelids drooping, and the eyes being rather turned up. The staff was introduced without sign of pain, and he was moved to the bottom of the bed, the ether in the mean time having been left off. He inhaled again for about half a minute before the operation began; for he had begun to show signs of sensibility by opening his eyes. The operation was performed without the least sign of pain. I could not see the steps of it, but it was concluded in about two minutes by the extraction of a mulberry calculus,

about the size of a kidney bean. He seemed in the third degree during the operation, and not quite so deeply etherized as on the introduction of the staff. He looked about him directly the operation was concluded, and began to sing a school lesson. His face was florid all the time of the inhalation. Mr. Tatum informed me that the bladder had a tendency to contract and empty itself by the side of the staff at the beginning of the operation; this would probably have been prevented by his being etherized a degree further, viz. to the fourth. The little boy quickly recovered.

3. *Operation for Sinuses by the side of the Rectum; illustrating the smallest amount of etherization with which an operation can be satisfactorily performed.*—Mr. Keate, assisted by Mr. H. C. Johnson, operated on Sir — for two sinuses by the side of the rectum. The patient was rather nervous about the ether, but when he had commenced, inhaled very well. In two minutes the eyes were turned quite up, the lids, however, being kept closed, and they were briskly closed again directly they were lifted up. The face-piece being removed for a moment, the features were observed to be unaltered in expression. At this moment the expiratory valve was opened a little, to dilute the vapour farther, the water in the bath being 64°, and, consequently, the patient having been breathing equal parts of air and vapour. At the end of another minute, the third from the commencement of the inhalation, there was no farther alteration in the patient, except, perhaps, that the eyelids did not close so briskly on being lifted with the finger; but I observed that Mr. Keate had got a probe introduced into one of the sinuses unknown to me, and with this proof of the patient's insensibility I requested that the operation might be performed, although otherwise I should have thought the patient scarcely ready for it. During the division of the first sinus the patient held his breath, moved one hand a little, and stretched out his fingers; and during the division of the second sinus he also moved one foot a little, but not so as to interfere in any way with the operation; and he did not move his body, or utter the least sound. The inhalation was discontinued just as the operation was concluded; and half a minute afterwards, as Mr. Keate was thrusting a pledget of lint into the wound, the patient flinched and uttered an angry expression, and directly afterwards he tried to raise himself up from the sofa, but was easily prevented. In less than a minute he said that he had been in Lancashire disputing with some people; and on Mr. Keate informing him that the operation was concluded, he expressed his surprise and satisfaction, and seemed to have recovered his faculties completely, having been unconscious only three or four minutes altogether. The pulse was counted between the operation and the introduction of the lint, and it was at the rate of 88 in the minute. 3viiss of ether were expended.

The attitude and respiration of this patient, and the slight movement of his limbs during the operation, were precisely the same as those of a person suppressing the usual indications of pain, and I have noticed the same thing in some other cases. The dream about the conversation probably occurred at the moment when he first spoke.—Vide Report on Surgery.

ART. 63 — *Reduction of a Dislocation of the Femur, on the Dorsum of the Ilium, under the influence of Ether.* BY JOHN CAUNT, Esq., Surgeon, Nottingham.

(*London Medical Gazette*, June 4th, 1847, p. 1010.)

The following case still further illustrates the astonishing effects of ether in the reduction of dislocations.

May 31st.—I was sent for late last night to Mr. D., a muscular man, 44 years of age, who, in returning from the country, was thrown from his gig, his horse stumbling when going at rather a rapid pace, and pitched upon the right shoulder, the coat being very much torn at that part. I immediately undressed him, and on examination found the shoulder on which he had fallen slightly hurt—merely bruised; but, strange to say, there was dislocation of the thigh-bone of the opposite side, upon the dorsum of the ilium. All his pain was referred to that hip, and he was constantly crying out about it, and could scarcely bear to be touched. There were also the symptoms of the above dislocation; such as shortening of the limb, inability to abduct it, and inversion of the knee, the foot turned inwards, and the head of the thigh-bone could be distinctly felt and slightly rotated upon the dorsum



iii. My friend, Mr. Simpson, kindly sent his ether apparatus, and undertook the control of it during the reduction. Dr. Hutchinson and Mr. Taylor were also present, and assisted.

The patient having been fixed in the usual position, the inhalation was commenced, and the action of the apparatus (the power it possesses of giving or modifying the vapour at will) was well illustrated. He soon exhibited symptoms of its effects, which at first were strong spasmodic action of the muscles of the extremities, particularly the upper. This condition soon subsided, and was immediately followed by complete relaxation and insensibility to pain; the pulse being soft and feeble. The extension by pulleys had only been used a very short time when the head of the bone disappeared from the position it had assumed, and the reduction of the dislocation was found to have been effected, almost to the surprise of every one present, and particularly the patient, who is a sensible man, and afterwards expressed his extreme delight at the means used.

ART. 64.—*Dislocation of the Humerus, of Five Weeks' Standing, reduced by means of Dr. Jarvis's Surgical Adjuster.\** Reported by ROBERT STONE, M. D., from the practice of Professor MAY, Washington.

(*Boston Med. and Surg. Journal*, Dec. 30th, 1846, p. 454.)

William Boothman, æt. 36, an Englishman, of exceedingly robust and muscular frame, presented himself to-day, on account of a dislocation of the humerus, the origin of which he thus describes: about six weeks since he suddenly ceased his unfortunate habits of intemperance, and in consequence had a slight attack of delirium tremens. Whilst in this condition and crossing a street he fell, striking the back of his right shoulder against the curbstone. He was not aware that any dislocation had taken place, but supposed that the pain, great tumefaction, and discoloration, which extended to the wrist, were merely the results of a violent bruise. It was but a few days before presenting himself, and after the tumefaction had subsided, that he observed the permanent immobility of the arm, and the deep depression under the acromion. Examination detected a dislocation downwards and forwards, with the head of the bone resting under the edge of the pectoralis minor, the elbow thrown backwards, and very slight mobility in its new position. Much numbness of the arm had existed since the accident, on account of pressure on the axillary plexus, and was still a subject of complaint. It would be proper to remark that the right clavicle had been fractured in his youth, and its bad coaptation produced deviation backwards and slightly upwards of the acromion. Careful examination satisfied Professor May that although the head of the bone was but slightly movable, no danger was to be apprehended from any complication of the axillary artery.

Although previously preferring and exceedingly successful with the pulleys, Professor May acceded to my wish to apply the apparatus of Dr. Jarvis in a case so capable of attesting its powers. Its application was preceded by v. s.  $\text{Zxvii}$ , and an ineffectual attempt to nauseate with tart. antim. and ipecac. Traction for a few minutes, in connection with the rotation so fully permitted by the adjuster, seemed greatly to increase the mobility of the head of the bone, and the ratchet bar was left in this position for some time, in order to weary the muscles, and act gently upon the adhesions. This alternate extension and rest was continued at proper intervals, when, just before the moment at which reduction would have been perfectly practicable, the extending bands, which had not been previously well examined, all gave way, leaving only the gain of greater mobility at the head of the bone. As it was impossible to remedy the accident at that moment, Professor May applied the sheets, &c., in the ordinary method, assisted by Professors Miller, Johnston, and others; but without success. Recourse was next had to the pulleys, which, being gently and steadily applied for a long time, until the man's endurance was exhausted, were also laid aside.

On questioning the patient as to the relative suffering endured during the three processes, he declared that the action of the adjuster was by far the least painful,

\* The apparatus is described in Volume III. of the Half-yearly Abstract, p. 235.

and at the moment of snapping the extending bands he "felt the bone at its socket, and that it slipped away."

Nov. 23d.—V. s.  $\frac{5}{8}$  tart. antim. and ipecac. with much better effect; the man for the first time acknowledged nausea. Having procured stout cords, we proceeded to the reduction with Jarvis's adjuster. The axilla was filled with a mass of cotton as usual, and the pad of the fork placed thereon. It may be worthy of remark, that on this occasion the perineal was substituted for the axillary fork, on account of the man's great depth of thorax, as it was observed that on bringing the elbow forward, on Saturday, its end impinged upon the sternum, causing excessive pain. The arm being flexed at the elbow, the extending cords were made fast, and extension commenced. At this stage of the operation the vast superiority of Dr. Jarvis's instrument was manifested; for whilst extension was made precisely in the axis of dislocation, Dr. May, with one hand in the axilla and the other grasping the forearm, had the most perfect command of the limb, and could produce rotation at his pleasure. When satisfied that the head of the bone had been brought low enough in the axilla, and sufficient mobility existed, a broad band was passed under the neck of the humerus, and tied over the shoulders of the operator. The forearm was then resigned, and, with both hands, he grasped the bone in the axilla, at the same time throwing back his body, so that the head of the humerus was forcibly lifted upwards and outwards. Whilst this manœuvre was performed, the elbow was rapidly thrown forwards at "the word," and hard up against the ribs, and the extending bands instantly relaxed. As a matter of course, the bone entered the glenoid cavity precisely in the same manner as it left it.

Although this case had resisted the best efforts with the sheets and pulleys, the reduction was effected in less than thirty minutes with the adjuster. Of course a very slight depression remained after the reduction, on account of the wasting of the deltoid, &c.; but when a pad was placed in the axilla, and Desault's apparatus applied, the roundness of the shoulder was restored, making but a slight deduction for the deformity from the old fracture of the clavicle. This result is a source of gratification to the operator and those surgeons who witnessed it, as it proved conclusively the great power of the instrument, and that the manœuvre could not have been thus performed with the aid of any other. I should remark that the method of commanding the head of the bone by Professor May, in connection with the instrument, was novel to myself, although I had the pleasure, a year ago, of seeing Dr. Jarvis apply the adjuster in a similar case at the military hospital of Val de Grâce, at Paris.

In the application of this instrument the proper rule for traction seems to be to draw down until the patient feels it severely, and then to rest a few moments and rotate, waiting until the muscles are so wearied as to enable us, when extension is resumed, to make great progress at a moment when they are unable to resist. Extension and rest are thus to be alternated, until the operator is satisfied that the head of the bone is brought down parallel with the plane of the glenoid. In this case there was no deviation in extension from the axis of dislocation, and the head was made to retrace its path precisely; then, by lifting it forcibly, whilst at the time of relaxing the extension the elbow was brought forwards and close to the thorax, the bone was set free in a line outside of the glenoid cavity. When thus set free the muscles were made available, and even the triceps and pectoralis assisted in the reduction.

The patient is now perfectly well, only carrying his arm in a sling as a precautionary measure.

ART. 65.—*Removal of the Superior Maxilla for a Tumour of the Antrum—Apparent Cure—Return of the Disease—Second Operation—Sequel.*

By J. MARION SIMS, M. D.

(Condensed from the *American Quarterly Journal*, April, 1847, p. 310.)

The subject was a negro boy, George, aged 18. The disease first manifested itself some time in the spring of 1844, and was supposed to be merely an excrescence from the gum, which was several times removed and cauterized; being always reproduced very soon afterwards. In five or six months the cheek began

to bulge. I saw the case early in January, 1845. The tumour appeared to be as large as a good-sized orange, occupying the entire extent of the left upper jaw, and involving, to some degree, the malar bone. The mouth was in a bad condition; the gums purple, tumid, and bleeding on the slightest touch; the teeth decayed, with the fangs here and there exposed, while, at other points, they were firmly ankylosed with their alveoli. The free scarification of the gums, the extraction of the decayed molars, and attention to his general health soon had him in a proper condition for an operation, which was performed on the 22d of January, 1845.

The cheek was opened by the curvilinear incision, taking particular pains to avoid the parotid duct. The facial artery being secured, the anterior flap was dissected up to the edge of the orbit. The ala nasi and frænum of the lip were cut up to permit the more easy elevation of the flap. The origin of the inferior oblique was divided, and the contents of the socket separated from the orbital plates of the maxillary and malar bones. The zygomatic face of the maxilla was freed by a downward dissection of the lower flap.

The left lateral incisor being extracted, an incision was made through the mucous membrane, near to and parallel with the longitudinal palatine suture. Two or three nips of Liston's bone forceps easily divided the alveolar and palatine processes. The eye and its appendages were then supported by the handle of a light silver spoon bent at right angles, while the nasal process was divided obliquely downwards so as to avoid injuring the nasal duct. The broad part of the malar bone was next divided into the spheno-maxillary fissure, which was more easy than the section of the nasal process, simply because it was more accessible. The separation of the palate plate from the palate process of the maxilla was effected by a thrust with a strong pointed bone knife.

The only remaining bony attachment, being that with the pterygoid process of the sphenoid bone, was separated by another thrust with the knife laterally.

The diseased mass being now movable was started slightly downwards, thus exposing to view the second branch of the fifth pair of nerves, just as it enters the infra-orbital canal, when it was easily divided, producing excessive but momentary pain.

The operation was now quickly completed by clipping the remaining attachments with the scissors.

The bottom of the wound presented a smooth concavity, fitting accurately the ovoid appearance of the tumour, thus showing that not a vestige of the disease was left behind.

The hemorrhage did not amount to more than eight or ten ounces. No ligature was applied save to the facial artery, and that was removed before the wound was dressed. The boy bore the operation (which lasted thirty-five minutes) with wonderful fortitude. During its performance he was allowed brandy-and-water as occasion seemed to require. At its completion he was permitted to lie down. After waiting half an hour, and compressing a single bleeding vessel, the posterior palatine artery, the wound was closed by the interrupted suture and adhesive plaster. There was no stuffing of the cavity, and no other dressing.

On the ninth day he walked out in the streets perfectly well.

His rapid recovery from an operation of such magnitude was a matter of astonishment to all who observed it. In a short time the cavity was filled up, all to two small openings about the size of a goose quill; the one leading up to the orbit, the other into the nostril. He kept these little passages stuffed with small pledgets of cotton, which, for cleanliness, were renewed after each meal. He left on the 1st of March, in excellent health and spirits, *apparently* cured, with no deformity but that from the cicatrix, and a slight twisting of the face to the right side when he laughed. The tumour was as large as a medium-sized orange, having rather a *tense elastic* feel. The only portions of bone visible were the alveoli of the lateral incisor and cuspidatus, with the tooth attached, a bit of the palatine and nasal processes, and a part of the malar bone. The orbital plates were entirely destroyed by pressure, so were the inferior spongy bones. The orbital edge of the maxilla was transformed into a sort of *spiculated* osteo-fibrous structure.

The proper substance of the tumour is osseous and scirrhus, and might be



termed an osteo-scirrhoma. The central portions are filled with *stellations* of bony matter sending off spangled radiations towards the circumference of the scirrhous mass.

I sincerely wish that the history of the case could end here, but the whole truth must be told.

He began to complain of pain in the cheek early in May. He had so much pain in and about the eye as to require, particularly at night, large doses of morphine. The growth of the tumour was remarkably rapid, so much so as to be perceptible from day to day. From its reappearance about the 1st of May, it had, in three weeks' time, got to be a great deal larger than the first tumour. The left eye was bulged out of its socket, deeply injected and lachrymose, vision greatly impaired, with very little power of moving the eye, and none of closing the lids. The skin of the cheek was thinned, reddened, and seemed to be in danger of ulcerating, simply by the mechanical pressure exerted by the rapid development of the morbid mass, which was greatly enlarged, not only here, but in every other direction. The cicatrix left by the first operation had become elevated, broad, hard, and painful, having very much the appearance of the dermoid tumour termed *kelloides*.

His condition was looked upon now as being perfectly helpless and hopeless, but he begged for a repetition of the operation, which was accordingly performed on the 24th of May, (about four months after the first.)

It is unnecessary to give the details of the operation, as I simply followed the tumour, separating its attachments on every side, for it was reproduced from every portion of the cavity made by the removal of the first tumour. It was the most tedious and painful operation I have ever witnessed; but the most difficult and perplexing part of it was the dissection of the mass from its attachments at the back of the socket, and as it were from the very base of the brain. The tumour was pushed downwards by an assistant, while the dissection under the eye was conducted slowly and cautiously, now with the scalpel and again with scissors, all the time cutting deeply in the dark, guided only by the forefinger of the left hand. During the greater part of the operation he evinced wonderful fortitude, but at the close his strength was almost exhausted; it lasted, I am sorry to say, *one hour and twenty-nine minutes*.

The hemorrhage was much more than at the preceding operation. A small artery at the bottom of the cavity was compressed for several minutes by the finger, and very soon the oozing of blood seemed to cease. I then introduced a piece of fine sponge (wet) just large enough to fill the cavity, and adjusted the flaps over it, securing them by the interrupted suture. Its presence was very injurious. It appeared to invite the flow of blood, and there was a gradual hemorrhage kept up for some time, till, in the course of two or three hours, his case presented altogether a very alarming aspect.

From the loss of blood during the operation, and from its gradual draining afterwards, as well as from the excessive shock to the nervous system, he passed into a perfect state of collapse. His pulse, at one time but 80 in a minute, instantly rising to 140, and even becoming extinguished on the slightest exertion; his respiration, 36 in a minute, suddenly amounting to 60, with great restlessness, burning heat of stomach, nausea and vomiting, sinking, excessive prostration, cold extremities, and cold clammy sweat, indicated but too plainly the imminent danger he was in of dying by the hands of the surgeon. I was exceedingly alarmed, cut loose the stitches, laid open the wound, removed the sponge saturated with blood, wiped out a few coagula, saw that there was a gradual oozing from the bottom and sides of the cavity, plugged it up with a bit of charpie wet in creosote water (twelve drops to the ounce of distilled water), watched it for a short time, and discovered that it had the happy effect of checking the hemorrhage. The flaps were readjusted and held merely by adhesive plaster. Brandy and carb. ammonia were administered very freely. He had a most uncomfortable night, the cold hands and feet, the nausea and occasional vomiting, the jactitation, internal heat and thirst, the thready frequent pulse, in short, all the symptoms of collapse continued unabated for nearly twenty-four hours, at the end of which time reaction was pretty well re-established, the pulse falling from 160 to 120 per minute.

As he was now considered safe, the gaping wound was closed by suture. He improved very fast, and his face was well in a week.

The tumour removed was nearly twice as large as the first, presenting the same peculiarities.

It was very soon discovered that the operation was fruitless, for the internal surface of the cavity showed evident symptoms of a reappearance of the disease at every point. As soon as he was sufficiently recovered he went home, saying that he intended to return for a third operation if it became necessary. The disease gradually increased, destroying entirely the vision of his left eye, filling up his mouth and throat so as to prevent deglutition, and he died (in four months) comatose, doubtless from the encroachments of the disease on the brain. He was emaciated to a mere skeleton simply from inanition.

*Remarks.* There can be but a common feeling of regret at the unfortunate issue of this case.

The first operation was justifiable, and every one was satisfied with it. The propriety of the second might possibly be questioned; but almost any one would have performed it when an apparently healthy young man was begging for it. I committed two errors in the last, which it may be of some practical importance to remember.

The *first* was in attempting to follow the tumour as though it had been perfectly encysted. Instead of separating it from the remaining portion of the malar bone, I ought to have removed the bone with it, by dividing the zygoma and the frontal process, which would have allowed me to get better at the mass. The operation would have been facilitated very materially, and, therefore, the pain and loss of blood would have been less.

The *next* mistake (and it was a horrid one) was stuffing the cavity with a bit of wet sponge. This substance absorbed the oozing blood, which, not coagulating, was conveyed to the most dependent part of the sponge, whence it fell into the throat, or ran from the mouth. If the sponge had been permitted to remain for two hours longer, it would certainly have killed him. I shall always regret that I did not tie the carotid, as was suggested to me by my friend, Dr. Ames. It would most assuredly have retarded the reproduction of the disease, and thus have prolonged life.

#### ART. 66.—*The Treatment of Partial Deafness.*

(Extracted from Dr. Allen Thomson's *Communication*. *Monthly Journal*, April 1847, p. 729.)

Sounds transmitted by contact of the sounding body directly to the head appear louder when the external meatus is closed. Thus, place a tuning-fork, while sounding, in contact with the middle of the top of the head, with the ears open, and it will be heard only faintly; then close the external ears, and the intensity of the sound will appear much greater, indeed almost doubled. If one ear only be closed, the intensity of the sound in the shut ear will appear so much greater, that the sound seems chiefly to be heard in that ear, and this to a remarkable degree; for even if the tuning-fork be applied to the head close to the open ear (provided it does not touch the external auricle), the sound will appear to travel over to the opposite ear, the meatus of which is closed. We can even trace, by our sensations, the way which the sound seems to take to gain the opposite side. When the tuning-fork, for example, is applied to any part of the skull, at a little distance from the open ear, the sound will appear to travel over the top of the head; but when applied close to the open ear, that is, towards the base of the skull, it seems as if the sensation of the vibration passed through the base to gain the opposite side.

Professor E. H. Weber, of Leipsic, to whom we owe an accurate description of this phenomenon, attributes the increase of sound to the resonance of the confined air of the meatus and tympanum, or to the vibrations established in this column of air, rendered a separate system in consequence of its enclosure.

In making similar experiments on persons deaf of one ear from affection of the tympanum or Eustachian tube the unexpected circumstance occurred, viz. that the sound of the tuning-fork applied to the head appeared, as in the experiments on

closing the meatus, much the loudest in the deaf ear. This may not occur in all, but in four out of five such persons in whom I have made the trial, the result was as I have now stated it; and it can scarcely be held that this greater intensity of sounds felt through the deaf ear was merely the effect of its being unusual.

In almost all those in whom I have tried the experiment, sounds of vibrating bodies applied to the hard parts of the head, like those vibrating in the external ear, appear louder the nearer the place at which the sounding body applied is to the seat of the hearing. This every one knows is the case with the ears open, and it may be ascertained with great ease when the ears are plugged, by the comparison of any sound of uniform intensity, such as the ticking of a watch, or sound of the tuning-fork applied at different parts of the head.

It seems surprising, considering how long it has been known that in some deaf persons the hearing of sounds is improved by promoting their transmission through the bones of the head, that an apparatus, calculated to facilitate this mode of communication of the sonorous vibrations, has not been employed in place of the ear-trumpet, which can be of comparatively little service to them. The experiments which I have made upon the partially deaf, lead me to divide them into two classes, according as their hearing is in the one set most perfect through the meatus or in the other through the bones of the head, a difference which may at once be ascertained by means of the tuning-fork. In those hearing best through the hard parts of the head, it has long been known that the air-passages, or accessory parts of the organ, principally are affected. In those partially deaf persons, on the other hand, who hear best by the meatus, it appears very probable, that in general an affection of the internal ear, or loss of sensibility of the auditory nerve, is the cause of deafness.

In these last the ear-trumpet is of essential service, by concentrating all the weaker vibrations in the passage which is to carry them to the nerve, whose sensations are deadened. In the former the meatus should be closed, and every means ought to be used, as by sounding-boards to collect, and solid elastic rods to conduct, the vibrations to the hard parts of the head.

ART. 67.—*Syphilis of the Bones—Excerpta from Dr. Porter's Lectures.*

(*Dublin Med. Press*, May 26th, 1847, p. 322.)

Swellings and pains of the bones and joints are to be ranked amongst the true and genuine symptoms of the venereal disease—they are of so frequent occurrence as to be almost universal—they exist amongst its most characteristic features, and by their nocturnal exacerbations often afford a most valuable diagnostic—and as such they have been mentioned by every writer that has described the disease with any degree of accuracy. They are generally late in making their appearance, but by no means necessarily so, for I have seen them in company with the eruptions and sore throat, and sometimes even preceding them, and what is of more importance, I have frequently met with them in patients who had not been subjected to any, even the slightest, mercurial treatment. They very rarely run into destructive ulceration and caries, unless as a consequence of some cruel mismanagement or some very unfortunate complication.

The venereal node, however acute it may be as to the suffering it occasions, is extremely chronic in its progress, and rarely advances to suppuration unless it is prematurely cut into by the surgeon, or the subject of it happens to be worn and broken down either by constitutional debility or injudicious treatment.

There is a striking analogy throughout all the symptoms and stages of the venereal disease; chancres are generally chronic, but we have seen them assume a phagedenic character from some peculiarity of constitution, some irregularity of conduct or injudicious treatment. Ulcers in the throat are generally chronic also, but may undergo similar changes from similar causes. The prevailing eruptions, the papular and the lichens, are mild and comparatively benignant, but occasionally we have the pustular and tubercular degenerating into foul phagedenic ulcers and rupial crusts; and so it is with the bones, the venereal affections of which, and of the periosteum, are usually indolent and almost harmless, but like the other symptoms may be roused into mischievous activity by some wretched condition



of the constitution, by improper management, or by being mixed up and complicated with mercurial irritation, with scrofula, or perhaps with both.

Nodes are at least of two kinds: one, consisting of a deposit of osseous material constituting a true exostosis; the other produced by a deposition of fluid between the periosteum and the bone. The first is (as far as I know) always a late symptom, and is by no means common.

The removal of this node is scarcely ever effected by the use of mercury, but the pain and inconvenience subside, and the small tumour remains hard, and no more sensible than any other part of the osseous tissues—at least such has been my experience of the few cases that have come under my observation: but to speak truly, I have not seen sufficient of this symptom to enable me to form positive or decisive opinions respecting it.

The periosteal node, as being more common, is far more important; it is usually a late symptom, but I have seen it at a very early period in company with some of the eruptions, and it is so far a truly syphilitic symptom, that few patients escape who have permitted the disease to progress without interruption, and fewer still who have merely endeavoured to arrest and delay its steps instead of wholly eradicating and expelling it. It is obviously occasioned by inflammation of the periosteum causing the effusion of a fluid sometimes semi-gelatinous, sometimes serous, and sometimes dark-coloured and sanious, between it and the bone, and thus it happens that small and thin bones, which derive their vascular nutriment chiefly or entirely from their investing membranes, on being deprived of them become carious, and perish with an almost inconceivable degree of rapidity, whilst in situations more favourably constituted, nodes may exist for a considerable time without producing any permanent deformity or future inconvenience. In this way we can comprehend why the bones of the nose endure the inroads of the disease so badly, and are often destroyed and lost in the course of a few days; whilst in other situations the calamity, if it happens at all, is delayed to a remoter period, and perhaps often is to be traced to injudicious interference. These nodes generally attack the bones which are most superficially situated and most slightly covered, and thus are met with on the front of the tibia, the outside of the fibula, the forehead, and other parts of the head, the clavicle, sternum, and ribs; occurring in the form of swellings as hard as if formed by the bone itself, not round nor circumscribed, but gradually subsiding to the level of the adjacent surface; not discoloured, exquisitely tender to the touch, and subject to nocturnal exacerbations of very great severity. After some time (and the interval seems to depend on the structure of the bone engaged) caries take place, then external inflammation, an increase of swelling, softening of the tumour, fluctuation, and finally the establishment of an ulcer; this ulceration is usually small, although the discharge is profuse, but instead of presenting the small papillary elevation so characteristic of the sore that communicates with a diseased bone, it, like other venereal ulcers, seems to have an irresistible tendency to scab, and is generally partially covered with a dry and dirty crust.

The thin bones of the nose, deriving their support almost entirely from their membranes, soon perish when detached from them, and the organ may be endangered, if not lost, before the patient is fully aware of his perilous condition.

The earliest symptoms that attract attention resemble those of a common catarrh. The patient loses the power of distinguishing one smell from another, but feels within his own nostrils a constantly persisting fetid odour; his head (as he expresses it) is stuffed; the air passes with difficulty through his nose, and the clearness of his voice is impaired; very soon an abundant discharge appears, which is easily distinguished from the natural secretion of the organ by its abominable fetor; he blows scabs and crusts from the nostrils, particularly in the morning, as they seem to accumulate during the night, and he is very uncomfortable until they are discharged. As the disease proceeds pieces of bone come away, and if this happens to any considerable extent the nose falls down, and becomes permanently, and, in some instances, disgustingly deformed. This affection is termed an *ozæna*, and I believe never leaves a patient without some lasting and incurable inconvenience. At the present day we not unfrequently meet with a more modified form of disease of the nose, principally in persons who have undergone short, irregular, and imperfect courses of mercury, in which its progress

is slower and its ravages far less extensive. Thus the septum may be partially removed, and a communication established between the nostrils, or the palate may be perforated into the mouth, in either of which cases the voice will be more or less impaired, and the inconvenience of the opening between the mouth and nose can only be rendered tolerable by the adaptation of an artificial palate.

When nodes followed by caries appear on the head, they receive the whimsical name of *corona veneris*. In their characters and progress they do not differ from those situated elsewhere, and might not have required special notice except from the circumstance of their occasionally inducing most disastrous symptoms, and even death. The possibility of this occurrence will be easily explained by reflecting on the intimate vascular connection that exists between the pericranium and dura mater, and the frequency of disease being communicated from one of these structures to the other. When a patient dies thus, it is usually with symptoms of oppressed brain and coma, and dissections after death exhibit a separation of the dura mater from the bone, a thickening of the membrane, and frequently a deposition of sanies, or of green and fetid purulent matter underneath. In such cases the obvious mode of relief is by the application of the trephine without delay; not that even this affords a certain promise of recovery, for matter may have formed in different and distant situations, or the disease may continue to spread notwithstanding the removal of a portion of carious bone, and the evacuation of any subjacent fluid, but it offers a chance, the only chance, of escape from certain and pressing destruction.

Nodes on the sternum and ribs run into ulceration with the greatest rapidity, and the ulcers are most intractable: as far as I can judge from my own experience, they are soon cured. It had been remarked years ago that the spongoid texture of the sternum particularly disposed that bone to caries, and favored its extension when once attacked: and the same is true of the ribs, only in a more limited degree; these parts also cannot be kept in a state of perfect rest, and whether these causes may produce and maintain disease, or that it only breaks out in persons of bad and broken, and debilitated constitutions, certain it is that few affections are more intractable or more destructive. Add to this that the great majority, if not all, the cases I have ever seen afford more than presumptive evidence of disease in the lungs, and it will be easily conceived why the opinion I entertain of them is so exceedingly unfavourable. It was formerly proposed, and I believe, not unfrequently the practice, to trepan the sternum, or remove a portion of the rib, with a view of cutting away the carious and rotten bone: and according to the doctrines of the olden times, such removal was absolutely indispensable to the cicatrization and healing of the sore. I am not favourable to such practice: I have trephined the sternum twice for abscesses seated behind it, and in two or three instances have cut away portions of diseased ribs and their cartilages, but cannot say that the results were very encouraging. In a case of purely idiopathic caries, it is possible such an operation might appear to be of use, but in one arising from a syphilitic taint, or in anywise complicated with it, if medical treatment is unavailing, I believe little may be expected from manual interference.

But the great difficulty is the correct constitutional management of these affections; and I know of no subject in which it is more utterly impossible to lay down fixed and determinate principles.

Sometimes, but it must be confessed not frequently, these affections of the bones yield to the sanative influence of mercury as kindly and favourably as any other venereal symptom whatever. Sometimes they disappear for a time, but return after a short interval, perhaps in a more aggravated form—perhaps in a more dangerous locality; sometimes small doses of the medicine seem to benefit cases that had resisted every mode of treatment; and sometimes in every shape, and form, and quantity, it manifestly disagrees with the patient, enhancing his sufferings, and of course increasing his danger. Nothing can be more vacillating and uncertain—nothing more devoid of principle, or more empirical in practice, than the treatment of these affections—nothing more illustrative of the fatality that has at all times attended the venereal disease, rendering it equally the scourge of mankind and the opprobrium of medical science. Mercury, and bark, and sarsaparilla, and iodine, and nitric acid, and a host of other medicines, have all been employed, and each has won for itself some fleeting reputation.



I have already stated my opinion that affections of the bones occasionally appear as the pure and unmixed results of the venereal contamination; in fact, that they are as truly syphilitic as chancre, sore throat, or any of the eruptions, and would become developed at their proper time, and in their proper order, if the malady was allowed to run its own course unchecked and unaltered by any medicine. When detected they are curable by mercury, and by it alone, but the difficulty lies in the detection, for few cases are met with in which the history is so accurately detailed, or the symptoms so clearly marked as to enable the surgeon to prescribe his antidote with perfect confidence. When we find a node remaining unaltered for a considerable length of time, and the patient neither wan nor worn, weak, pallid, or emaciated, it appears to be a case in which mercury promises to be successful, and may be freely prescribed. Even when it is otherwise, and the system seems to have suffered to a considerable extent, if, either from the history of the case, or our own examination, we have reason to regard it as venereal, without admixture or complication, mercury may still be adventured on, with cautious attention to the rule of regulating the dose by the apparent strength of the patient.

But it is not with these truly venereal symptoms that the greatest difficulty and embarrassment are experienced; neither are the patients who suffer from them so often broken or debilitated as to render a trial of mercury in the first instance peculiarly hazardous; but when the disease is complicated with scrofula or other affection, the natural tendency of which is to corrupt and spoil the bones, and to which mercury in any shape, and almost in any quantity, is generally pernicious, it is no wonder that the combined malady should become unmanageable by any medicine, and refuse to yield to almost any treatment. Mercury is in these cases administered in but small quantities, if at all. In its stead the medicines are usually resorted to which have been found most beneficial in the diseases with which we suppose the venereal to be complicated. Thus we treat mercurial affections with sarsaparilla, the acids, bark, a change of temperature and of climate, and these are precisely the remedies which are found most serviceable in many of the so-called venereal diseases of the bones. In like manner, scrofulous affections are treated with iodine in its various preparations, particularly the hydriodate of potash; and this latter medicine has obtained for itself a reputation in syphilitic cases which I hope it may hereafter be able to maintain. Again, it is often found that the efficacy of one or other of these modes of treatment is greatly increased by the addition of small quantities of mercury, or by combining it with some of the preparations just alluded to; and thus, perhaps, we may be able to understand why the iodide of mercury is so frequently, as well as so successfully, employed in caries and in other syphilitic symptoms. But, after all, these are usually empirical attempts, and as such attended by the results that generally await such practice; at first undertaken with doubt and hesitation, and watched in their progress with anxious solicitude, some are found to prove successful, and afford encouragement for similar trials in apparently similar cases, whilst others are not only not benefited, but seem to be aggravated by almost any and every mode of treatment suggested.

If, however, the constitutional management of nodes is uncertain and undetermined, it is otherwise with the local; for these swellings should be left to run their own career, and scarcely ever interfered with; and I would have left this part of the subject without further observation, were it not that some respectable authorities have sanctioned a practice in many respects objectionable. Those who divide nodes into the hard and soft recommend that the latter should be cut into at once; yet I can scarcely conceive anything more detrimental than opening a venereal node, or anything that a surgeon will be more likely to regret. The practice was probably derived from observing the instantaneous relief experienced on the division of an idiopathic node down to the bone; but there is a vast difference between periostitis occurring in a patient whose constitution is otherwise sound and one whose system is poisoned by some specific taint. In the one case the patient has only simple or accidental inflammation to contend with, which may be combated by ordinary measures, and by no means necessarily involves a caries of the bones on its exposure to the air: in the other, there is a specific inflammation, that can only be removed by specific treatment, the effect of which, even when successful, is so slowly wrought that the exposed bone will assuredly run into caries before



the disease can be arrested. The unopened node is often removed by mercury, or other suitable treatment, even after it has become red and shown a tendency to soften and suppurate: but I never yet knew of a venereal node opened by a surgeon that a tedious, foul, and unhealthy ulcer was not the consequence, and if it happened to be situated on an important bone, the patient was most fortunate if he escaped even with these inconveniences. It is quite true that in the latter stages, when the tumour has suppurated, and the bone is rotten and spoiled beneath it, an incision can scarcely render matters worse, and will be right and proper if it relieves pain in the slightest degree; but at any period previous to that, a meddlesome interference with the knife is always unprofitable, and may be decidedly injurious.

ART. 68.—*Galvanism for the Decomposition of Urinary Calculi, and in Affections of the Bladder.* Extracted from Mr. DONOVAN'S Essay on the Efficacy of Electricity, Galvanism, &c. in the Cure of Disease.

(*Dublin Quart. Journ.*, May 1847, p. 302.)

M. Orioli, "one of the most distinguished philosophers with whom Italy is honoured," says Becquerel, proposes to use galvanism in the interior of the bladder by means of a sound, varnished everywhere except at the point. The sound is made to communicate with one end of the pile, while the other end is put in connection with the reins. "Perhaps," says he, "a calculus may thus be decomposed." Dr. Harle, of Norwich, conceived the same idea.\*

M. Bourges des Mortiere dissolved a calculus, out of the body, weighing one gramme, perfectly, in twenty-four hours, by galvanism. But MM. Prévost and J. Dumas have gone far towards proving the possibility of successfully employing galvanism as a means of destroying a calculus in the bladder. A fusible human calculus, placed in water, was submitted to the action of 120 pairs of plates during twelve hours. The bases and the phosphoric acid were liberated at their respective poles, but, owing to the nature of the arrangement, they reunited in a fine powder. The weight in this period was reduced by twelve grains. Other trials were made during sixteen hours, and at the end of this time the calculus was reduced to a mass so friable that the slightest pressure reduced it to little crystalline grains, which could easily pass through the urethra:

MM. Prévost and Dumas conceive that it is almost always possible to introduce into the bladder two conductors, which shall be spread out at the extremity by means of a slight spring, so that they may touch the calculus by their internal surface, which, in this part, is deprived of its insulating envelope. The calculus would be thus decomposed without injury to the bladder, since the current takes the shortest distance between the two poles.

To prove that the galvanic process may take place in the bladder without injury, they introduced a properly prepared pair of conductors through the urethra of a dog into the bladder, and connected them with a pile of 135 pairs, acted on by nitro-sulphuric acid. They remarked with much satisfaction that the dog was not discoverably inconvenienced while the bladder was distended with injections of lukewarm water, yet this same apparatus was capable of decomposing water with great energy, and furnishing torrents of gas.

A fusible calculus was then fixed to a sound between the two platinum conductors, and the whole was introduced into the bladder of a large bitch; lukewarm water was injected, and the conductors were put in connection with all the troughs which composed their battery. After some slight movements the animal was quiet, and endured the galvanic action for an hour. The calculus, when withdrawn, showed unequivocal traces of decomposition. The same process was repeated morning and night for six days, but the calculus had now become too friable to permit further repetition, and had lost weight in the same ratio as the former one. The animal, after a few days' repose, was killed, when it was found that the bladder was in its natural state.

These experiments, it must be confessed, render it probable that this mode of removing calculi from the bladder may one day or other take the place of the two

operations at present in use, except when the calculus consists of uric acid, which is, unfortunately, too commonly the case. The editors of the "*Annales de Chimie*," subjoin to this paper an observation that nitrate of potash, dissolved in the water injected into the bladder, renders the decomposition of hard, compact phosphates as easy as that of the porous kinds. They also satisfied themselves that the bladder is not injured during the action of the pile; and they think that instruments may easily be contrived for determining the nature of the calculus on which it is proposed to operate.\*

The galvanic influence may with more certainty be made to act on the bladder itself than on anything contained in it; it exerts a decided efficacy in restoring the energy of that organ. The case of a lady under the care of Drs. Goodwin and Radford is described, who, after her accouchement, was unable to evacuate the contents of the bladder. All the usual remedies failed during a fortnight's trial; the catheter was employed two or three times a day, and could not be dispensed with. On Dr. Goodwin's suggestion, galvanism was tried, and the *first application proved successful*.†

ART. 69.—*On the Treatment of Abscesses by Seton.*

(*Dublin Med. Press*, May 3d, 1847, p. 274.)

Dr. Darby said he had recently treated some cases of abscess by seton, and as it was a mode of treatment not generally adopted, he wished to submit a short account of them to the Surgical Society.

In the summer of 1844 he was induced to try it in the case of a young woman who had an encysted abscess, of about an inch and a half in diameter, on the side of the neck, which she objected to have punctured, fearing an "unsightly mark" would remain, and requested he would "put it back." This he told her it was impossible to do, and advised her to let him pass a fine thread through it: to this she consented. With a curved needle he inserted a thread of spool cotton as a seton, through the entire diameter of the abscess, and applied water dressing over all to avoid inflammation. On the following day he found pus oozing beside the thread; and in this manner the contents slowly and continuously discharged, the cavity gradually contracted, and at the end of ten or twelve days was obliterated. He removed the seton, and after a short time no perceptible cicatrix remained.

He next treated in this manner a large strumous abscess, about four inches in its longest diameter, which a boy in the workhouse had on his sternum, and the case went on more favourably than he thinks it would have done had he punctured the abscess with a lancet.

In November last he was consulted by a lady, who, after a severe attack of influenza, had inflammation in some of the cervical glands, situated behind the sterno-mastoid muscle, deep-seated, and about midway between the ear and the clavicle, two of which suppurated. Hoping to produce absorption of the pus, the methods usually had recourse to for the purpose were tried without success; the matter travelled beneath the fascia, and an abscess pointed above the clavicle. A thread was inserted in this situation, including between the points about two inches of skin; the contents distilled out, but the abscess was fed from that which first formed; and finding that benefit was likely to ensue, he passed a thread through the original abscess. In two days afterwards he was enabled to remove the first seton, and in six days subsequently the second. The disease was cured, and the closest observer could not now perceive a trace of either the disease or the operation.

He has since treated four cases of strumous abscess in this way with similar results. In one case only did any unsightly cicatrix remain, and this he attributes to the thinning process having advanced considerably before the seton was applied.

He has not found any case followed by high inflammation, or much pain. In fact, the results have been satisfactory.

\* *Annales de Chimie et de Physique*, No. xxiii. p. 202.

† *Provincial Journal*, Dec. 24, 1844.

He has seldom or never had a case where pus was absorbed after he was fully satisfied it had been formed, and is, therefore, disposed to insert the seton as early as possible after the formation of pus, and remove it as soon as the cavity of the abscess appears obliterated. And it is his opinion that this mode of treatment, followed by careful dressing and judicious management, is calculated to obviate in a great degree the disfigurement and annoyance which so frequently result from the ordinary method of treating abscesses, especially those which present in conspicuous situations.

ART. 70.—*Amputation at the Tibio-Tarsal Articulation, according to Mr. Syme's method. Ether successfully administered.* By Dr. BELLINGHAM.

(*Dublin Medical Press*, June 2, 1847, p. 337.)

The patient, a boy of about twelve years of age, was admitted under Dr. Bellingham's care, in St. Vincent's Hospital, a short time since, labouring under the ordinary form of scrofulous disease of the tarsal bones in the left foot; matter had formed, and had made its way to the surface at several points upon the dorsum and sole of the foot. Being considered a favourable case for operation, and as the ankle-joint was sound, he determined to give a trial to Mr. Syme's modification of amputation at the ankle-joint.

Some days previous to the operation the inhalation of ether was tried upon the patient, without being attended with any unpleasant effect. It was resolved, therefore, to put the patient under its influence previous to the operation.

The patient was placed upon the operating table, and commenced inhaling; in about four minutes he was declared in a fit state, and the operation commenced; no tourniquet was used, pressure with the hands of assistants being made upon the artery in the thigh and leg.

A semicircular incision across the dorsum of the foot, commencing at the inner and terminating at the outer malleolus (the convexity towards the toes), was made with an ordinary small amputating knife; the knife was then carried from the inner to the outer malleolus across the sole of the foot in a line opposite to the first incision. The knife was then laid aside, and the anterior flap dissected up with a scalpel, the articulation opened, and the foot separated by dissecting out the os calcis and astragalus. This was an exceedingly tedious and disagreeable part of the operation, and occupied several minutes; the scalpel was kept near the bones, in order to avoid injuring the arterial branches by which the under flap was to be nourished. The operation was facilitated by holding the foot in the left hand, and using it as a kind of lever. The patient remained under the influence of the ether, and was perfectly insensible to pain until the foot was separated, a period of six minutes.

The anterior tibial artery was first tied, the posterior tibial had not been divided, and the plantar branches and some other small vessels only, in the posterior flap, required ligature; a very small quantity of blood was lost in the operation. The point of the inner malleolus, and a larger portion of the external malleolus, were then removed with a bone forceps. The stump was not dressed until three hours afterwards, when another small branch in the under flap required ligature. In dressing it, the upper flap was found to have retracted very considerably, between two and three inches, the under flap not at all, and the edges consequently could not be brought quite into apposition. Several points of the interrupted suture were used, with strips of adhesive plaster and cold-water dressing.

Everything went on satisfactorily. Some suppuration occurred, and the matter readily escaped near the malleoli; the ligatures came away early, the cicatrization of the stump proceeded favourably, and was nearly completed a few days since, when the patient was sent out of the hospital for change of air, as the same disease had set in in the tarsus of the opposite side. Obscure signs of this were present at the patient's admission, which, after the operation, became more developed, and seemed to progress the more rapidly as the cicatrization of the stump advanced.

The patient was not aware the foot was to be removed; he was perfectly insensible to pain during the operation, and when placed in bed afterwards he cried bitterly on seeing the stump. The inhalation was not continued so long as to pro-



duce perfect insensibility; the patient conversed with those about him while the operation was going on, and yet was at the same time quite unconscious of pain.

The only objections which it appears to me can be fairly urged against this operation are, that it is by far a more painful one to the patient than amputation as ordinarily practised, while it is a much more tedious and troublesome one to the operator. Disagreeable an operation as amputation is, under any circumstances, the tedious dissection which is necessary here, in order to form the lower flap, renders this much more so. Indeed, for this reason it is an operation which I would not willingly perform, unless the patient could be brought under the influence of ether.

I was not prepared for the extreme retraction of the upper flap, which was found to have taken place previous to the dressing of the stump. Indeed I was rather afraid of finding the flaps inconveniently long; this, however, did not prevent cicatrization from going on, and a very good stump resulted—a cast from which I had hoped to have exhibited to the meeting, but for the reasons I have mentioned it was not thought prudent to keep the patient in the hospital until the parts had perfectly healed.

[Remarks on this operation, and on the modification of it by antero-lateral flaps, as proposed by Professor Handyside, will be found in our Reports on Surgery, Vol. II., p. 206, and Vol. III., p. 243.]

[M. Banders, of the Val de Grâce Hospital, in Paris, has just performed the operation for the fourth time, by making lateral flaps and preserving the malleoli. We are informed by M. Rognetta, editor of the Journal from which we quote, that in his opinion the modification of M. Banders is preferable to the original operation of Mr. Syme, because the flap is formed by the tissues of the heel, which are hard, slightly vascular, not fleshy, subject to become gangrenous, and difficult to dissect. The operation has now been performed seven times in France, and in all with success.—*Annales de Thérapeutique*, Juin, 1847.]

The objections made by Mr. Bellingham and M. Rognetta are easily disposed of. Those accustomed to perform the operation do not find the dissection difficult, and none who have seen Mr. Syme practise it have ever considered it so. It is difficult to perform some operations from written instructions alone. Many surgeons who, like Mr. Bellingham, found it tedious and difficult, have considered it neither the one nor the other after visiting Edinburgh; and many who have been wholly prejudiced against it have adopted it with enthusiasm on seeing the evidence which this city contains of its advantages. But, supposing it were tedious, this can form no valid objection to a proceeding which has for its object the preservation of the leg; and we are at a loss to understand on what principle the hospital surgeons of London, and elsewhere, continue to sacrifice the limbs of their patients to a most injurious routine practice. The fear of gangrene need never be entertained, as experience has demonstrated that when the flap is not too long it never arises.]\*

ART. 71.—*Dislocation of the Femur on the Dorsum of the Ilium. Reduced by Kluge's method.* By VONDERFOUR.

(*Monthly Journ. of Med. Science*, June 1847, p. 926.)

The following case is reported in the "Repertorium," by Vonderfour. The method of reduction which was employed is one proposed some time ago by Kluge.

A servant girl, twenty years of age, fell on a slippery floor, and pitching on the left hip, sustained a dislocation of that joint. The patient was first seen three days after the accident. The left limb was four inches shortened, and rotated inwards, with the toes resting on the dorsum of the right foot, the trochanter major was displaced upwards and forwards, lying on a level with the anterior superior iliac spine, and on rotation of the limb the head of the bone could be indistinctly felt rolling on the dorsum of the ilium.

She was freely bled, nauseating doses of antimony given, and cold applications laid over the injured part. On the following morning reduction was effected in

\* *Monthly Journ. of Med. Science*, July, 1847, p. 63.

the following manner. The patient was laid on her back on a low table, so that the breech projected over the end of the table, the right foot supported on a stool, and the left held by an assistant. A strong sheet, placed between the legs as a perineal band, and brought round the pelvis, was given to another assistant, to produce counter-extension. A second sheet was passed over the lower part of the abdomen and pelvis, the ends of which were held by two or more assistants, so as to keep the patient firmly down on the table. Lastly, another sheet was passed round the upper part of the thigh, by which a fifth assistant was forcibly to draw the upper end of the bone outwards. The surgeon now taking hold of the limb, and bending it as much as possible to a right angle with the body, stooping down, placed the limb over his left shoulder, so that the lower part of the limb hung over his back. Fixing the limb in this position, and forcibly raising himself to the erect position, forcible abduction being at the same time made by the hand placed around the upper part of the thigh, the head of the bone was at once made to resume its place in the acetabulum.

**ART. 72.—Amputation of the first Carpo-Metacarpal Articulation.**

By J. H. POWER, M. D., &c.

(*Dublin Med. Press*, June 23, 1847, p. 387.)

On the front of the wrist in every individual, no matter how muscular or how fat the person may be, the anterior prominence of the trapezium may be distinctly felt at the root of the thumb. Immediately in front of this, the point of the finger can be made to sink into a narrow superficial groove, which exists between the bone and the metacarpal bone of the thumb: this groove corresponds to the articulation—it is, in fact, the anterior extremity of the joint: it can be always felt. I never yet examined an individual in whom I could not distinctly satisfy myself of its existence, and by its means ascertain at once the precise situation of the articulation. Standing in *front* and to the *inside* of the patient's hand, and placing the edge of the scalpel upon the prominence of the trapezium already described, I made a straight incision forwards towards the metacarpal bone of the thumb, for the distance of about half an inch: from the anterior extremity of this incision I carried a second over the palmar surface of the ball of the thumb, as far forwards as the cleft between the thumb and the index-finger. I commenced again at the anterior extremity of the short straight incision, and carried another forwards over the back part of the thumb, till it met the second incision at the free edge of the cleft. Having completed the cutaneous incisions, I next reflected with the scalpel the integument which formed the inner margin of the first incision: this enabled me to hit upon the joint with greater precision. A few short strokes of the knife through the muscles in this situation laid bare the inner or ulnar surface of the capsular ligament: this was now easily divided with the point of the knife, by commencing the incision at the groove in front of the trapezium; the joint was thus exposed. The thumb was next drawn outwards with a moderate degree of force, so as to expose the articulation completely at its ulnar side: when this had been effected, the incisions through the muscles were afterwards completed, and the diseased bones removed.

The following is the method recommended by the late Sir A. Cooper in his *Surgical Lectures*:—"To accomplish this operation you must begin your incision by cutting through the integuments at the inside of the thumb, nearly opposite to the first joint: you carry this incision backwards to the union of the metacarpal with the carpal bones; this incision will form a flap, consisting of integuments and the abductor muscles, quite sufficient to cover the wound that will be occasioned by the operation. After having completed this flap, the knife is then to be passed backwards from between the index-finger and the thumb as far as the trapezium, to which bone the head of the metacarpal bone is articulated. When you arrive at this position you are to turn the knife so as to make its blade form a right angle with the incision just made: you are then to carry its edge through the joint by which the integuments will be divided, and the bone is thus removed." Mr. Liston observes:—"The metacarpal bone is separated from the trapezium by passing a narrow knife, longer than that used for the fingers, from the middle of the space betwixt the forefinger and thumb, marked by the depression at the

decussation of the abductor pollicis and the abductor indicis, up to the articulation; the knife is moved from point to heel, and the handle inclined towards the forefinger. Its progress is arrested by the articulation, and if *the edge be then turned a little towards the ulnar side*, and the thumb pressed in the opposite direction, the joint will be easily opened, and the head of the bone so loosened that the blade of the knife can be passed behind it." Mr. Fergusson, of King's College, remarks,—"When the thumb and metacarpal bone are to be removed, the operation may be done by carrying a bistoury through the soft parts between the metacarpal bone and that of the forefinger upwards, until it is arrested by the trapezium; then through the joint," &c.

These operations essentially agree. In all of them, as well as in the methods at present generally adopted, the articulation is opened by passing the knife from the free edge of the web backwards, between the thumb and index-finger till it reaches the trapezium.

If any one will take in his hand a well-dissected carpus, and examine carefully the relations which its several articulations bear to each other, he will at once perceive how exceedingly close the first carpo-metacarpal joint lies to the articulation between the trapezium and the outside of the metacarpal bone of the index-finger; and he will readily understand how easily the edge of the knife, when *passed backwards between the index-finger and the thumb as far as the trapezium*, may get between this latter bone and the index-finger. I have no doubt the surgeon will be as likely to cut into this articulation as into that between the thumb and the trapezium, more particularly if he adopt the recommendation of Mr. Liston, and turn the edge of his knife "*a little towards the ulnar side*." I believe such an error as that we have now spoken of would in many instances, lead to most unpleasant consequences. An incision made between the trapezium and the metacarpal bone of the index-finger, will infallibly open the synovial membrane which lines the articulations between the carpus and metacarpus, and between the first and second rows of the carpal bones. This is an exceedingly extensive synovial membrane, and it is most extensively related to the carpal bones; any injury inflicted on it necessarily endangers these small cellular bones which are covered by it. When the membrane becomes inflamed they cannot escape, and the inflammation will be very likely to terminate in caries.

The advantages which I conceive are gained by the operation I have proposed are—first, the *readiness* with which the articulation may be exposed in the *early* part of the operation; secondly, the *certainty with which we may avoid wounding any of the other articulations in the neighbourhood*; and, thirdly, the surgeon can see what he is doing from the moment he opens the capsular ligament till he removes the metacarpal bone.

[Malgaigne describes four methods, stating that the easiest is undoubtedly the ordinary method; but the proceeding of Scoutetten, or the oval method, gives much the best results, and should be generally preferred. The method described above by Dr. Porter is the oval method nearly as modified by Malgaigne, and performed by himself. The latter author states, "I commence by a vertical incision, which ascends half an inch above the joint, and descends one inch below it; the oval incision begins and ends in the inferior end of this incision." The greater length of the vertical incision is to prevent the trapezium projecting through the wound by the loss of substance at the point of the V.—*Manual of Operative Surgery*, 1846.]

#### ART. 73.—*The Treatment of Lateral Curvature of the Spine.*

By E. F. LONSDALE, Esq.\*

(Condensed from the Author's "*Observations*," 1847.)

The question of treatment resolves itself into these points. First,—there is weakness of the vertebral column; it has then to be artificially supported. Second,—there is displacement of certain bones; the vertebræ, the ribs, scapulæ, and clavicles, which lose their natural relative position to one another, at the same

\* Vide art. "On the Nature and Causes of Simple Lateral Curvature of the Spine," Sect. II, p. 97.



time that the ligaments on one side become shortened; these bones have to be replaced, and the resistance of the ligaments to be overcome. Finally,—there is irregular muscular development of the two sides of the body, existing both as a cause and as an effect.

It is of no use to support the spine without the displaced bones are mechanically acted on, with the intention of replacing them, at the same time that means are taken to overcome the resistance of the ligaments, and it is of no use doing either of these without the action of the muscles be attended to afterwards, by endeavouring to give increased power where it is deficient. On the other hand, it is of little use attending to the muscular system only, which is done in many plans of treatment; for it is not sufficient to redress the deformity, but in many cases will only tend to increase it, if the spine be not first of all brought out of its curved position: a point which can be easily understood if the origin and the insertion of the muscles are considered, and the action they will have upon the ribs and spine, when these bones are thrown so much out of their relative position.

*The object of all spinal supports ought to be—*to combine mechanical pressure with mechanical support. [Mr. Lonsdale describes his own apparatus, which consists of a *pelvic hoop*, made of steel; a *small crutch* attached to an oblique arm of steel, firmly fixed to the centre of the posterior part of the hoop, and a *broad plate* to fit the convex part of the thorax, to keep up pressure on the expanded ribs, and act upon the curvature of the spine itself. The plate and crutch are adjusted by screws, and the former is made to act as a lever.]

The advantages gained by the spinal apparatus are these. First—the fallen shoulder is supported, and so one of the causes tending to keep up and to increase the deformity is removed. Second—the whole of the left side of the thorax remains free and uncompressed, and ample room is allowed for the expansion of the ribs. Third—the convex, or projecting side of the thorax is pressed against, and through it the spine is thrown to the opposite side by aid of the two great mechanical powers, viz., the lever and screw. Fourth—the whole of the support and the moving power act from the same part of the apparatus, namely, the centre of the pelvic hoop behind, so that all tilting or lateral motion is guarded against. Finally—the whole apparatus lies closely in contact with the body, the waist is left free and unconfined, and the shape of the figure and dress so little interfered with as to be but slightly altered.

*Of the Method of Employing the Recumbent Position as an Adjunct only in the Treatment of Spinal Curvature.*—If we desire to straighten a bent stick or rod of iron, should we stretch it by pulling upon the two ends in its long axis? Should we not rather attempt to *unbend* it, by placing the most curved part on some body to form a fulcrum, and then act upon the two extremities by applying a lever force in a direction opposed to the curve? Would not a bent stick be most easily straightened by placing the curved central portion on the knee, and then drawing or pulling on its two ends?

It appears that the principle of extension is not the best to act upon to bring the spine from the curved into the straight position; nor does it seem the most scientific, for the force tells mechanically with the least advantage, and requires that most powerful means be exerted to produce the desired effect. All curves, no matter of what nature the body in which they exist, are more easily rectified by applying the force in an opposite direction, by *unbending* them rather than by pulling upon them at their two extremities; in the former the advantage of a lever power is gained; in the latter, an extending force only can be employed.

The position by which lateral flexion of the whole vertebral column could be produced by *bending* the spine in the opposite direction to that in which the curvature had thrown it, would be the one most likely to overcome the resistance of the ligaments, and to bring the displaced bones into their natural position.

Not any English authors have recommended the position of placing the patient on the side, in order to produce the lateral flexion of the spine, and thereby to overcome the resistance of the ligaments in the most effectual manner, at the same time that the ribs and vertebrae are brought out of their abnormal position by the pressure that is made upon them.

The patient should be placed on the side on which the projection formed by the curve exists, instead of on the back, and the legs, head, and upper extremities

allowed to fall to a lower level than the trunk; by this means a sufficient power is at once gained, by the simple weight that is then exerted at either end of the trunk, to gradually act upon the spine; and to regulate itself, imitating, in fact, the straightening of a bent rod or stick, no other mechanical means are required; the weight of the legs at the one extremity, and of the head and shoulders at the other exerts a force quite sufficient to redress any slight curvature that may exist, and as much as can be borne, or it may be judicious to apply in severer cases. The object is to stretch the ligaments, and so to overcome their resistance, at the same time that the bones themselves are pressed in a direction the opposite to that in which they have been displaced, and are thus rendered more movable, and more capable of being acted upon by any apparatus that may be afterwards employed to give them support.

A couch should be employed of the following construction; it is six feet in length and two feet in width; the horizontal portion on which the patient lies consists of a framework divided into three parts: the central portion, which is the smallest, is fixed and connected to the sides of the couch, more towards the upper than lower end, to be opposite to the thorax when the patient is placed upon it. To this central portion there are two others attached by hinges, moving up and down like the flaps of a table, and which admit of being fixed at any angle by means of sliding quadrants, that pass through two bars, extending from the under part of the central portion of the couch, down to two spindles that connect the legs together. The ends of the couch itself are disconnected at the upper and lower part, so as not to interfere with the motion of the flaps. By this means the level of the legs, or of the head and shoulders, can be altered at pleasure, by letting either the upper or lower flap of the framework, or both, fall as much as may be required, and fixing them by a common thumb-screw working against the sliding quadrant underneath.

When the patient is placed upon the couch, the body is supported by a sling made of a broad belt, six or eight inches wide, attached by a strong strap and buckle on either side, to a perpendicular framework, or yoke, thrown across the couch, and fitting into it nearer to the upper than the lower end, that it may be opposite to the thorax when the patient is placed within it. This belt admits of being raised or lowered, and can be made to act upon the curve of the spine by the straps or buckles with which it is attached to the perpendicular framework just described.

The cases in which *the exercise of the muscles* may be employed with beneficial effect will be found to be the following:—Girls of spare habit, in whom the whole muscular system is weak; where the vertebræ are thinly covered with the muscles, the spinous process being prominent, the scapulæ on both sides projecting, and wanting their close adaptation to the ribs, owing to the absence of sufficient power in the muscles to keep them in their natural position; where the curvature of the spine is general throughout its whole length, and can be easily altered in one direction or the other, the bones being but loosely connected, owing to deficiency of strength in the ligaments; the shoulder of one side being higher than the other, though not to any marked extent, and the ribs of the left side, though less convex than on the right, still not compressed to an extent sufficient to cause a hollow beneath the left scapula; lastly, where the curvature has existed for a short time only, and will admit of being easily redressed by pressure made with the hands. Under these circumstances, whatever the age of the girl may be, whether before or after puberty, much may be done by increasing the development of the muscular system generally, paying particular attention to that of the muscles of the spine and upper extremities; at the same time that the health of the girl is to be improved by the administration of tonic medicines, strengthening diet, and placing her in a situation to breathe pure and bracing air. Many girls are said to grow out of the deformity, and these are the cases where they do so, when, with the improvement of the general health, the muscular system at the same time becomes more developed; but in these slighter cases the cure will be much facilitated by giving the spine artificial support in the intervals of the exercise of the muscles, to avoid the inclination there will naturally be for it to fall into the curved position again, which support may be gained by the above named



instrument, which has the advantage of not confining the body generally, or of interfering with the action of the muscles.

The cases in which the exercise of the muscles does more harm than good are those where the curvature, although it may be confirmed, may not yet be fixed, that is, the deformity may be very great, but yet there may be sufficient yielding in the spine to allow of it being moved or acted upon when pressure is made forcibly against it, where the ribs are more increased in convexity on the right side, and more depressed on the left, with a corresponding projection, and sinking of the scapulæ of the two sides, causing also the corresponding difference between the level of the two shoulders. Any increased power given to the muscles in these cases, without attempting mechanically to support the ribs and spine, and to support the left shoulder, which by its weight is tending to bear downwards and to increase the concavity, will only keep up the deformity, and generally increase it. The grand point is to bring the spine as nearly as possible into its normal erect line; to relieve the compressed ribs of the left side, by supporting the shoulder which is bearing its weight upon them, at the same time that the opposite or convex side is pressed upon by a force that gradually admits of being increased. The means by which this can be done, already described, do not from their mode of adaptation to the trunk, at all interfere with the action of the muscles, or with their increased development, while they prevent them acting injuriously upon the deformity itself.

The position that I recommend is one that throws the whole spine more backwards than forwards; which tends to redress the curvature, at the same time that the muscles of the spine are brought actively into play. Attach two pulleys or hooks to the ceiling of the room, or to an artificial framework, placed in some situation about two or three feet above the head. The patient is to stand in a position that the pulleys may be about a foot and a half or two feet behind her. She is with both hands to take hold of a stick or spindle, to which two ropes are attached, and which pass through the pulleys, having weights fastened at the other ends, sufficiently heavy to require some exertion to draw them up, the weights being increased or diminished, according to the strength of the patient; six or eight pounds in each is quite enough, and as much as the patient can raise without over-fatiguing herself. The ropes should be long enough to enable her to incline the body forwards on the hip-joints, without bending the spine itself, drawing the weights upwards as much as she can, keeping the arms extended above the head all the time, and bringing them as far forwards as the inclination of the body will admit of, without moving the feet from the position in which they were originally placed. The body is then to be brought into the erect position again by raising the trunk on the hip-joints, and letting the weights fall, and so to pull the arms behind and above the head. It may be as well to tie a knot in the ropes, to check the fall of the weights, that the arms may not be strained beyond the point of extension to which they can easily be carried behind the head.

This exercise may be repeated for a certain time daily, and as often as the patient can conveniently do so, the object being not to fatigue the muscles, but by degrees to strengthen them, at the same time that the ribs and spinal column are brought into a position the reverse of that into which the curvature has a disposition to throw them.

If this principle be well carried out, and a strong and efficient spinal support be employed at the same time, it is probable that all *slight* cases of lateral curvature may be cured without the necessity of employing couches at all.

#### ART. 74.—*Treatment of Nasal Calculus.* By HENRY COOK, Esq.

(*Boston Med. and Surg. Journal.*)

The following came under my treatment not long since :

Mrs. H., aged 25, of good constitution, had been suffering for the last eighteen months from severe headache: the pain was most intense over the frontal sinuses, accompanied by an offensive discharge of a mucopurulent character from the left nostril and throat. The pain in the head had increased to such a degree as to materially impair her memory, causing at times dimness of sight, particularly of the left eye, giddiness, with loss of appetite, and a disordered state of the digestive



organs; in fact, her general health began to be seriously affected, and in this condition she applied for advice.

On examination, the nasal passage on the left side appeared to be completely blocked up. I was first led to suppose that the obstruction might be owing to a polypus, or rather morbid growth, but on passing a probe a hard substance was encountered, about two inches from the orifice, feeling like a portion of bone in a state of necrosis. The septum was forced over to the opposite side, causing the right nasal passage to be somewhat contracted. The left lachrymal duct was obstructed, and pressure made at the inner canthus was followed by a discharge of purulent matter from the puncta. Stillicidium lachrymarum existed, and the conjunctiva of the eye was somewhat injected. The probe being withdrawn, a pair of polypus forceps were then introduced, and with some difficulty I succeeded in grasping and extracting a hard body through the nostrils. Considerable hemorrhage followed, but it was soon checked by the application of cold. The foreign body was of irregular form, rough, about an inch long by half an inch in diameter, hard, brittle, and evidently of a calcareous nature.

The patient was not aware of having introduced anything into the nose, but stated that she first observed some obstruction about eighteen months since.

Inflammation of the mucous membrane of the nose and throat followed, but yielded to antiphlogistic treatment.

[The Second Volume of the Half-yearly Abstract contains a succinct account of Calculi of the nasal fossæ, by M. Dumarquay, art. 59, p. 90.]

**ART. 75.—Description of a New Apparatus for the Treatment of Fracture of the Thigh.**  
By GEORGE BOTTOMLEY, Esq., Croydon.

(*Lancet*, July 10, 1847, p. 44.)

Having been appointed some years since surgeon in connection with an important line of railway then in progress of formation, upon which the number of workmen under my care sometimes exceeded 2000, ample opportunities were afforded me of carrying out my views with respect to fractures of the femur, and of testing their value. I invariably used an apparatus described by the subjoined sketch, which was made under my direction, and in every instance the results were most gratifying and satisfactory; for, with but one or two exceptions, it would now be difficult to discover in my former patients, either by their gait or by their mode of using the limb, which of the two had been the subject of fracture; and their recovery at the time was more than usually rapid.

The screw power of which I have availed myself has been noticed by Bowyer; but his mode of adapting it does not offer sufficient means of extension and counter-extension, and requires the use of tightly-drawn bandages, which are entirely dispensed with by my apparatus. It will also be seen that the whole of the fractured limb is exposed to view, and should the slightest contraction be observed, the remedy can be instantly applied by means of the screw, the management of which is as simple as can well be conceived.

The *modus operandi* is as follows: the belt is secured round the upper part of the chest by braces over the shoulder. A pocket in the belt receives the head of the splint, where it is made fast by a piece of tape. The foot is placed in a well-padded boot, and straps from each side of the boot are fastened to a belt round the lower portion of the thigh, immediately above the patella. The long splint has at the lower end a revolving screw, to which is attached, at right angles, a short metal rod, fitted into a brass box, fastened transversely to the sole of the boot, which can thus be moved up and down the splint at pleasure. The splint is secured to the lower portion of the patient's body by a well-padded pelvic strap, and there are one or two other straps to be used round the leg or not, according to the judgment of the attendant. When once properly applied, the screw must be turned to bring the limb to its proper length by extension, and no bandage to it will, under any circumstances, be required. Having thus established a fixed point at the head of the splint by means of the braces, it will be at once apparent that the apparatus confers the power both of extension and counter-extension, and is, moreover, so completely under the control of the screw, that it may be regulated to the greatest nicety by a mere application of the finger and thumb.

[We have examined this apparatus, and can testify to its simplicity and admirable adaptation to the indications required to be fulfilled.]

ART. 76.—*On the Employment of Cold Water in Cases of severe Burns.*

By Dr. KÜSTEN.

(*London Medical Gazette*, July 23, 1847, p. 175.)

A case of very extensive burning, treated most successfully by the prolonged application of cold water, has been recorded by Dr. Küsten. the particulars of which seem to indicate the great advantage which may probably be derived from this mode of treatment in most cases of severe burns. Dr. Küsten was first led to set a high value on the use of cold water in such cases by observing the good effects which resulted from it in the case of his own child, nine months old, which was severely scalded about the neck, chest, and abdomen, by the upsetting of a tea-kettle containing boiling water. The application of cold water was commenced immediately after the child's dress was removed: very abundant vesicative power had already taken place in the form of numerous large and small blisters. For six hours, without intermission, the application of cold wet cloths was continued; the cloths being replaced by others as quickly as they became warm. At the end of this time the smaller vesicles had quite disappeared, and the places occupied by the larger ones were indicated by more or less intensely reddened spots. The child meanwhile had fallen asleep, and it slept soundly the whole night, (the accident having occurred about six o'clock in the evening.) On the following morning the only trace of the burn consisted of a dry shrivelled appearance of the cuticle on one small spot, and this peeled off in a day or two.

The case, however, in which the beneficial effects of this mode of treatment were especially illustrated occurred in a brandy distiller, who, in consequence of the bursting of the still, was extensively scalded over the body by the boiling and blazing spirit. The man's head, at the time of the accident, was fortunately covered by a thick cloth cap, and escaped injury; but the upper part of the body, being defended only by a shirt, suffered severely. When seen by Dr. Küsten, about an hour after the accident, the patient was almost unconscious: he lay moaning, and constantly ejaculating "Fire!" After washing off, by means of a watering-pot, the layers of scraped potatoes which had been spread over the burned surface, it was found that over the whole body, down to the lower part of the thighs, there was scarcely a spot which was not more or less injured. The slightest degree of injury was manifested by vesication; but over the neck, chest, arms, and abdomen, the skin in places was quite destroyed. Dr. Küsten immediately covered the entire burnt surface with linen, and for an hour this was kept constantly cold and wet by pouring cold water over it from a watering-pot. After pausing for five or six minutes, the application of cold water was renewed, and continued for another hour, at the end of which time the man had recovered from his state of partial unconsciousness. He was then left, with directions that the application of the cold water should be continued as before. When seen in about six hours afterwards the patient was in a promising condition: his face was slightly flushed, eyes open, pulse 100. He complained of a sense of general burning, which was relieved by drinking, and by the repeated application of cold water to the burned surface. This application was continued until the patient complained of being cold. On examining the injured part next day, the places which were previously occupied by the vesications were indicated only by intense redness; the other part had much the same appearance as before; portions of the destroyed skin came off on removing the dressing. The injured parts were then dressed with cloths dipped in vinegar, and kept constantly wet by sprinkling cold water on them. The patient had some sleep during the night, and on the following day the reddened portions of skin had resumed almost their natural colour; commencing granulations were observed along the margins, where the skin had been destroyed. The pulse was 90, the thirst less intense, and the tongue less dry than on the preceding day. For nine more days the same treatment was continued, and with the happiest results, for at the end of this time the wounds were almost healed.

In the treatment of such severe wounds by this mode, the dressing must, of course, be changed at least once in the twenty-four hours.

Dr. Küsten mentions one or two other instances in which the healing of burns of various degrees of severity, was effected most rapidly and satisfactorily by this continued application of cold water. (Vide Report on Surgery in the Half-yearly Abstract, Vol. V., p. 198.)

ART. 77.—*Removal of the Lachrymal Gland.*

By I. Q. PEMBERTON, F. R. C. S., Ballinrobe.

(*Dublin Quart. Journal*, Aug. 1847, p. 246.)

Mary Gibbons, aged 81 years, came to me in the month of March, 1843, with a large tumour protruding from the right orbit, inclining towards the external angle, and completely concealing the eye from view; the integuments covering it were of a purplish colour, somewhat resembling the tint of muddy port wine, and traversed by very large tortuous veins. On raising up the tumour and elevating the superior palpebra, the eye could be seen, with the cornea quite flattened, as if sliced off with a knife, caused, no doubt, by the pressure as well as friction of the tumour against it in the movements of the eyeball. The pupil was natural, and contracted on the stimulus of light. The span of the lids was small, which gave the eye a very sunken appearance. The globe was not protruded from the orbit, notwithstanding the size of the tumour. She stated that it commenced about ten years before in a small "lump" towards the outer part of the orbit; that "it continued to increase gradually until it grew over the eye," the sight of which she lost about eight years before. She could not raise the upper lid except with her hand, and she says that she had only occasionally a sharp darting pain in it, but, from its deformity, she had made up her mind to have it removed. Accordingly (assisted by surgeon Robertson of the 69th regiment) I performed the operation. My first incision commenced at the junction of the frontal and nasal bones, and continued along the superciliary ridge, close to the eyebrow, extending to about half an inch or better beyond the external angle of the eye. I then made another incision from the point of my first, and carried it along the anterior surface of the tumour, at such a distance from the ciliary margin of the lid as to leave sufficient, but not too much, integument, for a superior lid, and, by making the two incisions meet at their extremities, thus removed an elliptical portion of the integuments, but leaving the ligamentum palpebrarum untouched. Having freed the tumour from its external covering, I next very carefully separated it from the roof of the orbit with the handle of the scalpel, gently drawing it forwards as I went along; but it was buried so deep in the orbit I had to use great caution for fear of injuring the globe of the eye upon which it lay, and to which it was partially attached by adhesions of delicate cellular membrane; however, by a little care and management I dislodged its deeply imbedded portion, and separated it from the conjunctiva, which was reflected on the portion of the lid left, to which also it was adherent, and removed it. There was not an ounce of blood lost, neither any vessel requiring a ligature wounded. I brought the edges of the wound together, and kept them in position by a few stitches of interrupted suture, and adhesive plaster, and applied water dressing and a bandage. She bore the operation remarkably well, and walked down the street to her lodgings. She stated she could now see everything with the right eye, but not quite so distinct as with the other; this arose, I imagine, from the flattened state of the cornea. In a week's time all the wound had healed except at its external angle, near a suture, where a very small abscess formed; but this was discharged and soon healed, leaving scarcely a mark of the extensive incision to be seen. In my mode of performing this operation I differed from those who had previously removed tumours from the orbit, and I think I rendered it simpler and quicker in its performance, with less dissection and pain to the patient, and leaving no deformity behind; for, in the second incision, I divided, and removed with the tumour, a quantity of loose and stretched integument, which, if left, would probably produce ptosis, as the muscle could scarcely again regain (from its great attenuation) contractile power sufficient to elevate the lid afterwards. The tumour, which is the size of a large orange, was divided into two lobes, the smaller one lying buried



deep in the orbit, the larger being external; it was composed of dense fibrous tissue of homogeneous consistence, of a whitish colour, and had no appearance of blood-vessels. The superciliary ridge at its outer margin was completely absorbed, so that one could bury the top of the index-finger in it. I saw this patient a few months since, three years after the operation; there was no mark to be seen; she could see with the right eye as well as the other, and there was no appearance of any return of the disease.

ART. 78.—*Strangulated Hernia treated successfully by Opium.*

By Dr. BUTLER LANE.

(*Provincial Med. and Surg. Journal.*)

The plan I am about to advocate consists in narcotising the patient by the free and continuous administration of opium.

The first case to which I shall refer was one of oblique inguinal hernia, occurring to a female about forty years of age. The previous history was somewhat obscure, but it seemed probable that slight protrusion and incarceration (probably omental in its nature) had existed for some time, and unequivocal symptoms of strangulation of the hernial tumour had existed at least three days. The swelling had enlarged considerably, there was much abdominal pain and tenderness, obstinate constipation, constant nausea, and copious vomiting of decidedly stercoraceous character. The symptoms had suddenly supervened, and gradually increased in intensity. In the first instance the stomach had retained large doses of cathartic medicine, castor oil, and calomel, though without any aperient effect; but now everything was rejected as soon as swallowed. All the usual medical means available had been unsuccessfully resorted to, and the taxis had been carefully and repeatedly applied. The tumour had now become exceedingly tender, the countenance assumed an anxious expression, and the pulse was accelerated. There could be no doubt that the operation was desirable, and that without delay; but to persuade the woman to submit to it was impracticable. I again employed the taxis unavailingly. A cathartic enema was then ordered, and any further procedure was remitted till the following morning.

Our patient was no less refractory and obstinate than before; her danger was imminent, and, in fact, death seemed almost inevitable. The state of depression rendered a tobacco enema objectionable; it was, however, agreed to try it, but though its sedative influence was fearfully powerful, yet it did not seem to afford any advantage, no fecal evacuation being obtained, and the stercoraceous vomiting and other symptoms continuing as before. As a last resource I then suggested the administration of opium in doses of one grain every hour.

I saw the woman next day with Mr. Stilwell, and was agreeably surprised at the change which had taken place. Twelve doses of opium had been administered, and she was fairly under its influence, having the appearance of a helpless state of intoxication. She had slept much, and when roused her answers and conversation were very incoherent. The pulse had increased in power and diminished in frequency. No complaint was made of abdominal pain, and there was much less tenderness in the umbilical region and the site of the tumour. The sickness had ceased, and food had been taken and retained. The improvement was permanent and progressive. A simple enema was administered that evening, and brought away much fecal matter. In the course of the day the tumour became spontaneously much reduced in size. For some time subsequently a small swelling remained in the groin; and whether it ever disappeared completely I am unaware.

A woman, aged 70, suffering severely with a catarrhal attack, presented symptoms of obstruction of the bowels, and on examination a femoral hernia was discovered in the left groin. She said she had first perceived the swelling two or three months previously, and it had seemed, within the last few days, to increase materially from the violence of the cough. The taxis and other remedial means were unavailingly resorted to, and the symptoms had existed forty-eight hours. At that period I found the tumour the size of a large walnut, free from heat or pain; neither was there any abdominal tenderness. The tongue was somewhat furred and dry, but there was no great heat of skin; the pulse did not exceed 84,

was regular, and not deficient in tone. The woman's chief complaint was of intense nausea and violent sickness, coming on with the paroxysms; any movement or attempt to change her position would also occasion it, and on taking any nourishment it was immediately rejected; with the continued vomiting, stercoraceous matter followed in abundance. I applied the taxis some time, and with considerable force, but unsuccessfully. A large enema with castor oil was administered, and, beyond a little gruel, no nourishment was to be attempted.

No favourable change had resulted the following morning; night had afforded no repose, and the retching and vomiting had been almost incessant. The enema had for the most part been retained some hours, but its evacuation had been unaccompanied by fecal matter. The constitutional depression was more manifest, the pulse had become accelerated, and some pain and tenderness were experienced both in the abdomen and in the tumour. Bearing in mind the success which had attended opiate treatment on the former occasion, I suggested its adoption in the present instance, as there was great aversion to the operation on the part of the patient and her husband. One grain was administered, to be repeated every hour.

After the administration of four more doses the tumour was found to have diminished to one-half its former size, the patient still continuing free from pain and sickness. A large injection of gruel with castor oil was then thrown up the rectum, and ample evacuation of fæces took place. The relief was permanent. A small swelling remained in the groin, and still continues, probably containing a portion of incarcerated omentum. In the words of Mr. Allan, "*Thus was this patient saved the risk and pain of a serious operation, by a remedy every dose of which brought relief and comfort.*" (Vide Report on Surgery, in the present Volume.)

ART. 79.—*On the Forms of Urinary Fistula and their Treatment.*

By WILLIAM COLLES, F. R. C. S. I., Surgeon to Dr. Stevenson's Hospital.

(Condensed from the *Dublin Quart. Rev.*, Aug. 1847, p. 57.)

Of these urinary fistulæ we may distinguish two very distinct forms; one having its origin in a purely local cause, and the other constitutional. The former may arise from an obstruction to the free passage of the urine through the urethra; and as it is that form which is chiefly noticed by authors, we shall first consider some points in connection with it. This obstruction may be caused either by a stricture of the urethra, or it may be a consequence of a rupture of the canal, which, being torn across, has been allowed to unite obliquely; or it may arise from a total obliteration, owing to sloughing or ulceration of a portion of the canal. When the fistula is a consequence of stricture, it is generally found in those cases in which the stricture has been neglected, allowed to become firm, hard, and close, or when it has been improperly treated by the too frequent or too forcible introduction of instruments, or by the incautious application of caustic.

The disease commences by the formation of an acute abscess, attended with considerable fever and constitutional disturbance, increased frequency in the calls to pass water, and increased difficulty and straining in evacuating the bladder, attended with severe scalding pain in some one spot of the urethra. The patient complains of a considerable swelling of the perineum, which prevents the urine flowing, and obliges him to keep the legs wide asunder, as any attempt to close them would be attended with great suffering from the pressure on the abscess. Hence he must lie constantly on his back, with the knees fixed and far apart. On examining the part we find a general fulness in the perineum, not amounting to a circumscribed tumour; sometimes a blush of redness, but often no discoloration of the integuments. No sense of fluctuation is afforded to the fingers, but rather a boggy feel, amounting at times to that oedematous state which retains the impression of the fingers. The abscess being bound down by the fascia, wants the distinctive marks of a common superficial abscess. Here we cannot wait for the abscess to point or become more evident; we must open it at once, and freely. The urine will pass through the incision, sometimes immediately after, and sometimes not for two or three days.

The opening gradually closes, till there only remains one large granulation, through which the urine flows; the parts round the fistula become consolidated

and hard: the skin puckered, giving the appearance of a neck round the orifice; and the fistula comes to be lined with a peculiar membrane, and is permanent.

We are told that the disease, when fully formed, is easily distinguished by a red papilla in the perineum, with surrounding hardness; and that when the patient passes water the urine will be seen to flow through it. This is not, however, always the case: for the fistula may open near the anus, and be so small and tortuous that the urine will not appear externally till some time after the act of micturition shall have ceased. We have known a patient make water before leaving home, and not perceive any urine pass through the fistula till he had walked two or three streets, and we came to examine and make pressure on the fistula.

In examining these fistulæ we cannot, as in fecal fistula, rely on the probe as a satisfactory guide; for though it will sometimes pass through the external opening, and touch a solid instrument in the urethra, yet in the majority of cases the course of the fistula is so tortuous, and leads off in a direction so distant from the urethra, that no probe can follow it in all its windings. Hence arises the great difficulty to trace and discover the exact situation of the internal orifice of the fistula, which, if we could find, would often afford us most material assistance in our further proceedings.

In speaking of the treatment of the disease, surgeons tell us that the urine constantly flowing through these fistulæ alone prevents them from closing, and therefore it will be necessary to prevent this; and that it can only be effected by causing the urine to pass through a hollow instrument, either constantly worn in the bladder, or introduced every time the patient wishes to pass water; and that this and this alone can effect a proper cure. This is certainly a severe method of proceeding, and not always necessary or successful; and by it we confine the patient to his bed, or to his home for five or six weeks, and we often find his health become seriously impaired from the confinement. The constant presence of the instrument causes irritation, inflammation of the bladder and urethra, frequent calls to pass water, straining, and mucous deposits, with some streaks of blood in the urine. If we still persist in retaining the instrument, the patient is likely to be seized with that form of fever denominated "urinary fever,"—a most severe and often dangerous complication. If we resort to the introduction of the instrument every time the patient wishes to pass water, we often find we do more harm than good. We irritate the urethra, the introduction of the instrument becomes more difficult, and we find, after a time, the stricture much increased in extent, irritable, and close; or that, perhaps, other strictures and fistulæ have appeared.

Hence I would say, that as the stricture is the cause of the fistula, we should direct our chief attention to the removal of it by the simplest means. If we introduce a catheter or bougie, perhaps every second or third day, we find that, according as the stricture is dilated, the fistula will close, less urine passing through each time. If we find this method fail, after a fair trial, we can resort to the constant wearing of a catheter, when the urethra will have become more accustomed to its presence. It has been at times found that even where the catheter has been constantly worn, the fistula has made little or no progress towards healing, although the urethra has been fully dilated, and not a drop of urine has passed through the fistula for several weeks. Here, if we remove the catheter, and allow the patient to go about, we find, when perhaps we are considering about our further proceedings, an evident improvement in a few days; the discharge both of urine and pus from the fistula becomes less, the surrounding hardness disappears, and the case goes on to a complete cure.

We are by some recommended, in order to expedite the closing of these fistulæ, to use various caustic applications; but if we use a solid caustic we find we cannot get it much farther than the external opening, as the canal is so small and tortuous; and, to be effectual, it should be applied to the internal opening. And when we consider the course of these fistulæ, and the force that would often be required to drive an injection to the urethra, a surgeon would dread the fluid caustics becoming extravasated into the cellular membrane, and producing incalculable mischief.

Reasoning from analogy of fistula in ano, we have been told to divide these fistulæ into the urethra, and make them heal from the bottom; but we find very little analogy between the two operations; and, besides, we cannot find, and there-



fore cannot divide, the internal orifice of these fistulæ. The various methods recommended will sometimes fail in effecting a cure of the disease, and we are obliged to have recourse to an operation.

When we cannot by any of the methods usually recommended find the urethra behind the obstruction, we must resort to a more tedious operation. We place the patient as in the operation of lithotomy; use no staff or instrument in the anterior portion of the urethra; let an assistant hold up the penis and scrotum, but make no pressure; leave the parts as much as possible in their relative positions; make a free incision along the raphe of the perineum; deepen the incision by cutting always in the same line till we have got through a depth of parts previously calculated on, recollecting that the apparent depth at which the urethra lies is much increased by the hard and unyielding nature of the altered structures through which we cut. Sometimes we feel, by the want of resistance to the point of the knife, that we have entered the urethra; often we have not even this to guide us; however, having carried the incision deep enough, we proceed to search for the urethra. The eye will seldom be able to distinguish it at the bottom of the incision; sensation conveyed by the finger, or a bent probe, will often inform us if we have to cut deeper, or the probe may enter the opening in the urethra and pass on to the bladder. We are told by desiring the patient to pass water, that we may perceive the opening in the urethra, if it has been effected; but it is seldom that a patient suffering under a protracted operation can direct his attention to exert the combined actions necessary to this evacuation, and even if he did, we can see the urine welling up, and filling and overflowing our incision, but we fail in seeing the opening in the urethra from which it issues. Having got the probe passed, and on it directed a gum elastic catheter, into the urethra, behind the stricture, the remainder of the operation is comparatively simple. Pass a probe from the incision up the urethra till we arrive at the obstruction; then introduce a staff into the anterior portion of the urethra; divide the parts between the two instruments until one will freely pass into the portion of canal occupied by the other: then cut off the head of the catheter which is lying in the bladder, fix this anterior portion of the catheter to the end of the probe, and thus pass it through the orifice of the penis. In two or three days' time we are able to introduce a larger instrument into the bladder, the stricture will be removed, and the parts will heal gradually and firmly.

Having now described the form of fistula which arises either from obstruction to the free passage of the urine, or where the urethra is free, still has a local disease as its cause, I will next proceed to consider another form which was first noticed by my father in his clinical lectures, and has not received the attention it merits. It differs materially in its symptoms and treatment from those already mentioned, which may be considered as local, this form being more intimately connected with a deranged constitution.

If the patient be an intelligent man, who can give a clear account of his disease, we learn from him that the formation of matter in the perineum was not attended with any inflammatory fever, nor with the throbbing, severe pain usually attending acute abscesses; but he will tell us that he, perhaps, occasionally noticed some scalding in micturition, some small tumour in the perineum, which did not give him much uneasiness or attract his attention; and that the progress of the abscess was slow, a considerable time existing between its first appearance and its opening. At times the patient will have no knowledge of the existence of the abscess till it bursts, or arrives at a very considerable size. He will tell us that he enjoys good health, but on closer inquiry we find that he has been for sometime in a low feverish state. His pulse is much quickened; he has considerable thirst, with slight impairment of his appetite, and loss of flesh, probably more remarked by his friends than by himself; when questioned he often declares himself in perfect health, the countenance is pale, with, probably, a tinge of yellow; the nails do not exhibit the healthy state of the adjacent part, but resemble a thin transparent layer of ivory laid on a surface of a purple hue. In many such cases there is some affection of the chest, generally cough, with copious expectoration, some distress in breathing, particularly when attempting any extra exercise.

If we turn our attention to the local appearances we observe the orifices of the fistula rather patulous, but no fungous papillæ projecting from them; there is very

little hardness round the openings, or leading from them, and no puckering of the skin forming a kind of neck round the orifice. They generally exist in great numbers externally, and appear as if punched out of the skin; but we seldom find more than two openings internally. If we introduce a probe into one of the openings, we find it passing away from the urethra: often from the same opening it will run in different directions. When we come to examine the urethra of the patient we cannot discover the existence of any stricture; and we can pass a full-sized catheter into the bladder without meeting any obstruction. Such is the history we receive from the patient, and such are the symptoms we observe in this form of disease, and we see that in both respects it differs materially from that previously described. In the one the general health is good; the abscess commences with inflammatory fever, is acute in its course, and causes much suffering; the fistulæ are few in number, marked by a red fungous papilla; there is an impediment in the introduction of a catheter, or evidence of some local disease. In the other the health is much impaired; generally old chronic cough, with expectoration, is present; a low sinking feverishness exists: the abscess is chronic, continuing for a long time, often unnoticed till it opens: the fistulæ are in great numbers, presenting merely wrinkles or perforations in the skin; the urethra is so free that a large catheter will pass readily into the bladder.

If, according to the generally received opinion and established rule of practice, we were to promise this patient to effect a cure by making him wear a full-sized catheter in the bladder, with the view of keeping the fistula free from any passage of urine, we should certainly have to suffer the mortification of a disappointment.

Should the surgeon be rash enough to undertake any operation, with a view to the cure of the fistulæ, he would not only signally fail, but would render the state of the patient worse than before. We have known a surgeon operate in such a case, and a patient return to the country, the urine flowing through the large wound, which had not made the slightest effort to heal. We regret that we have no mode to guide us to the successful treatment of these cases. Of course, on first visiting the patient, the surgeon is tempted, both for his own satisfaction and also his patient's, to introduce a catheter, but even this proceeding requires caution, for we know that in such broken-down constitutions this operation, performed as carefully and gently as possible, has excited urinary fever, and even led to a fatal termination. Having satisfied ourselves as to the state of the urethra, we should be cautious how we repeat the operation, for if the catheter be introduced too frequently, even should the patient escape the urinary fever, still we may induce an irritation and unhealthy action in the urethra, which may give rise to stricture.

Our local applications will, therefore, be more with the view of alleviating the sufferings of the patient, and allaying local irritation and inflammation. If we direct him each time he goes to pass water, to make pressure on the part, or to keep a moderate constant pressure on the fistulæ, so as to prevent so much of the urine passing through them, we shall find, after a time, that some of them will become smaller, and even close. This and the occasional introduction of the catheter, at long intervals, should be our principal local remedies. Our chief reliance, however, must be in an improved state of the general health, and the removal or alleviation of the cough by those various means used in such cases, and which it is not our province here to mention.

Should we be so fortunate as to effect the removal of this, and restore the patient to good health, we shall find that the fistulæ will close almost without any local treatment, if not, we shall have him in a condition to bear the application of such other measures as we should expect to succeed.

We find, in too many of these cases, that the chest affection, or other organic lesion will go on, and in the end phthisis or hectic fever will carry off the patient.

Thus we perceive that there are two distinct kinds of urinary as of fecal fistulæ—one form local, acute, and requiring active treatment, and often operation; the other depending on the deranged state of the constitution, not permitting much local interference, and entirely forbidding any operation for its cure. It can only be relieved by constitutional treatment.

ART. 80.—*Removal of a Pebble from the Trachea by Tracheotomy and Inversion. The Value of Stethoscopic Diagnosis.*

(*Guy's Hosp. Reports; London Medical Gazette*, Aug. 13, 1847, p. 303.)

H. W——, æt. 13, was admitted into Guy's Hospital, on Friday morning, at 2 A. M., 30th of July, 1847, with the following history:—On Thursday, the 29th of July, he was running a race with another boy, and had placed two pebbles in his mouth for the purpose of keeping it moist, (a common custom on such occasions), and, while urging his speed to the utmost, on taking a full inspiration, one of the pebbles slipped from his mouth, and it seems passed into the larynx down into the trachea, as he was immediately seized with a fit of coughing and some dyspnœa, which, however, soon subsided; but the boy immediately expressed his conviction that the pebble was in his "windpipe," as in the act of coughing he could distinctly feel it moving up and down the passage; but, at the same time, said that it never passed above a point to which he directed attention (the lower edge of the cricoid cartilage), which would account for the absence of the violent paroxysms that attend the presence of a foreign body in the glottis.

Mr. Pritchard, of Foot's Cray, was sent for, and proceeded to place him with his head downwards, in which position he remained for some time, but without the desired object being obtained. This experiment was three times unsuccessfully repeated, producing each time violent coughing and difficulty of breathing, and ecchymosis of the conjunctivæ resulted from his forcible straining.

During the whole period of this ordeal, the boy said that he could feel the pebble move up and down in his windpipe. Mr. Pritchard sent him to Guy's Hospital, where he was placed under the care of Mr. Bransby Cooper.

On his admission, the patient was free from cough or dyspnœa, his respirations were 20 in a minute, and he slept composedly in the usual position.

Friday, 2 P. M.—He was first seen by Mr. Cooper, who, by auricular exploration, could not obtain sufficient evidence to convince him that any foreign body was still in the trachea, and argued the probability of the abnormal sounds being produced by the substance having irritated the glottis; or that, if actually admitted into the windpipe, it might have been expelled. Mr. Cooper requested Dr. Hughes to examine the patient, who found roughened tracheal breathing, with wheezing on the right side, and to a less degree on the left, but acknowledged the physical signs were unsatisfactory as to the positive proof of a foreign body being still in the trachea, probably in consequence of the general irritation of the trachea and larger bronchial tubes.

On consultation, it was determined not to interfere at present, but to wait for more certain indications of the actual presence of the foreign body, to keep the patient perfectly quiet, and to have him constantly watched. In the evening it was observed by Mr. Hilton that the left lung was nearly inactive, scarcely any murmur being audible. The breathing, however, was not attended with any distress.

31st.—Passed a comfortable night in a sitting posture, with occasional cough, but without any violent dyspnœa. The left lung remains in the same condition; but, in the course of the day, after a slight fit of coughing, the respiration became quite audible in it.

On Sunday, August 1st, he remained much in the same state.

On Monday, 2d, he was examined by Dr. Addison, who found diminished supply of air to the left lung; but as the boy had undergone much examination, he agreed with Mr. Cooper, as he was not suffering from urgent symptoms, that he should be kept perfectly quiet until the next day, when a more complete exploration might be made, and the propriety of an operation determined.

On the 3d Dr. Addison examined him. Breathing had returned completely in the left lung, and was puerile there, but at the apex of the right lung it was more full, and accompanied with a slight roughness. This was the state of the breathing found both at the anterior and posterior aspects of the chest. In all the lower part of the right lung the breathing was pure and loud. The percussion over the apex of the right lung was less clear than on the left side. When the patient



coughed a movement was heard and felt, as of a foreign body impelled by the air at each operation.

From the present signs and the previous history of the case, no doubt could now exist of the presence of a foreign body in the upper branch of the right bronchus, that impeded the passage of air into the upper lobe of the lung. The shifting of the impediment from the left to the right side, as first noticed by Mr. Hilton, was much in favour of this opinion. It was resolved that the operation of tracheotomy should immediately be performed, in order to allow of the inversion of the patient with comparative safety.

The operation was performed in the usual way by Mr. Cooper. A free opening was made into the trachea, and four of its rings divided by a bistoury. During the operation, both before and after the opening had been made in the trachea, the patient coughed violently, and stated that he felt the pebble move; but he thought it was expelled through the opening. A probe was passed into the trachea with a view to feel the pebble, but without any other effect than that of making the patient cough violently. He was now inverted and struck forcibly on the back, when he said he felt the stone move above the wound in the trachea; and while in this position, during the act of inspiration, the pebble fell through the wound into Mr. Hilton's hand.

Since the operation the boy has been free from any constitutional disturbance; he breathes freely, no air passes through the wound, and he may now be considered quite convalescent.

#### SECT. IV.—RARE SURGICAL CASES.

ART. 81.—*A Case of Monomania caused by a Depression in the Skull, and Cured by the Operation of Trephining.* By C. L. ROBERTSON, M. D.

(*Lancet*, Aug. 14, 1847.)

No. 455, aged 23, a sailor, was admitted into the Cumberland Lunatic Asylum on the 10th of February, 1825. Ten years prior he fell from the mast of a ship, which accident was followed by an attack of acute mania. In six weeks he recovered the use of his intellectual faculties, but continued so ungovernable in his temper and violent in his conduct, as to render him unfit to be at large, and to necessitate his removal to the asylum.

On admission he complained of frequent pains in the part of the head on which he fell, and also entertained the delusion that these pains were caused by his mother beating him. Otherwise his intellectual faculties were sound. Various symptoms of disease of the moral principle were present; he was morose, taciturn and insolent. He entertained an ungrounded dislike to his relations, and was subject to violent fits of passion. After being some time in the asylum, his delusion gave way, and the intellectual powers of his mind remained sound; his conduct, however, continued ungovernable, and his language abusive; while kind words made no impression on his wayward temper. He still complained of pains in the injured part.

On examining his head, I discovered a very distinct depression on the posterior superior margin of the right parietal bone, to which situation he referred the pains. In consultation with my colleague, Mr. Furness, consulting surgeon to the institution, it was decided that the depressed portion of skull should be removed by the trephine.

On the 3d of January, 1846, the operation was skilfully performed by Mr. Furness. The patient bore it well, and the wound healed without a bad symptom. The portion of the cranium removed was healthy in appearance on both of its surfaces. It adhered very firmly to the dura mater, requiring considerable force for its removal. It was altered considerably in form, appearing to have been indented rather than fractured, which is not improbable, seeing the accident occurred to the patient when only 13 years of age.

By the 1st of February, his conduct was, and had been since the operation, in every way improved. He had had no bursts of passion—answered civilly when

spoken to, and was grateful for the relief afforded him. He looked forward with pleasure to his return home, which was promised to take place as soon as the weather improved. He had, for the last fortnight, been working on the farm, and stated, that since the operation he had been free from the pain in the head, from which he formerly suffered.

On the 20th of March he was discharged "cured," having, since the performance of the operation, shown no symptom of his previous malady.

ART. 82.—*Chronic Suppuration of the Joints, &c., after Scarlatina—Puncture of the Abscesses—Recovery.* By H. BERNARD, Esq.

(In a Communication to Dr. Graves. *Dublin Quart. Journal*, May 1847, p. 325. Condensed.)

Martin Byrne, aged 5 years, of a fair complexion and delicate frame, was attacked with scarlatina, during the month of November, 1842; the tonsils were greatly inflamed and swollen, and required the use of the solution of nitrate of silver.

About a week or ten days after the disappearance of the eruption, a uniform swelling, without any discoloration of the integuments, and accompanied with excessive pain, presented itself behind the right ear; in a short time it extended above the ear in one direction, and below the mastoid process in the other. As soon as the fluctuation became evident, I made a puncture in the centre of the swelling, and gave exit to about an ounce of purulent matter, of thin consistence, of a canary yellow colour, and without any offensive odour. After a few days, matter escaped from the external meatus of the same side; the discharge from this outlet was always increased by pressure on the external abscess. As the first opening I made had a tendency to close, I made another incision, lower down, over the mastoid process, which was kept open till the matter ceased to flow. Almost immediately, another abscess formed at the back of the neck; this was opened, and matter discharged of a similar nature to that above mentioned.

The right elbow-joint was next attacked, commencing with great pain, and considerable constitutional disturbance. The pain was speedily followed by swelling, which attracted attention the sooner, owing to the attenuated state of the arm and forearm. As the swelling of the joint increased, the integuments around became thin and transparent, and traversed with an unusual number of veins. A sense of fluctuation soon became apparent, especially in the spaces between the olecranon process, and the condyles of the humerus, in which situations the synovial membrane was protruded by the distending fluid. Judging from the character of the abscesses which formed about the neck, their progress, &c., I had little hesitation in concluding that purulent matter was secreted by the synovial membrane of the humero-cubital articulation, and was distending its sac. As the hectic fever was daily increasing, and the poor boy becoming greatly emaciated, passing many nights without sleep, I made an incision between the olecranon and external condyle into the joint, and gave exit to not less than two ounces of purulent matter, in every respect similar in consistence and colour to that we have before described as having been discharged from the ear and the neck. The joint became now greatly diminished in size, the patient experiencing much relief. A linseed-meal poultice was ordered to be applied, and the arm to be kept quiet. The matter continued to exude from this opening for a fortnight or three weeks, when the left elbow-joint became similarly affected, and was lanced in due time, giving vent to a quantity of matter, resembling in character that which was discharged from the other elbow. Many weeks elapsed before these joints were restored to a healthy state.

The treatment adopted at this period consisted of tonics, and any nourishing diet which the child wished for. He, for the most part, refused to take wine and broths, and was principally supported by cow's milk, of which he generally took from three to four pints every day.

In a short time, another abscess formed over the sacrum; when mature, this was also lanced, and after discharging purulent matter for a week or ten days gradually closed up.

I now began to flatter myself that my little patient would be relieved from further suffering, and that, although reduced to the greatest extent of exhaustion and

emaciation, he would soon recruit his lost strength. However, to my great disappointment, new symptoms presented themselves in an unexpected quarter. He now complained of most acute pain in the right lumbar region, which completely destroyed his rest at night, and rekindled fever in the system. The pain was speedily succeeded by fulness of the abdomen on the same side, which increased gradually, accompanied by great distress. Suddenly, a small tumour, about the size of a Spanish nut, made its appearance in the corresponding groin, beneath Poupart's ligament, and external to the femoral vessels; it soon increased to the dimensions of a pullet's egg, giving a distinct sense of fluctuation. From the mode of its formation and progress, I concluded that I had a psoas abscess to deal with. As the former operations were attended with so much success, and afforded so great relief to the patient, I resolved to open this abscess likewise. Some days, however, elapsed, before the parents of the child would give their consent. I now made a valvular incision into the lower part of the sac, and gave exit to not less than a quart of purulent matter, of the same canary yellow colour, and resembling, in every respect, that which was discharged from the ear, neck, elbow-joints and sacrum. I dressed the wound with lint and adhesive plaster, and after a few days, allowed more matter to flow out. This treatment was continued from time to time, until the abscess contracted, and ceased to discharge pus. From this time, the boy commenced to regain strength, and the hectic fever to decline.

A space of nearly eight months elapsed from the time this child was first attacked with scarlatina to the period of his recovery. I paid my little patient a visit during the present week. He appears in the enjoyment of good health; the right elbow-joint is, however, in a state of ankylosis, the forearm being permanently bent on the arm (I repeatedly directed the parents to use passive motion, as the only means of guarding against this termination); he has, however, the use of the left arm, and walks well.<sup>77</sup>

[In illustration of suppuration of the joints after eruptive fever, the reader is referred to "a case of universal purulent deposition into the joints, with separation of the epiphyses, occurring as a sequel to small-pox."—*Medico-Chirurgical Transactions*, 1838, p. 148.]



## PART III.

# MIDWIFERY AND DISEASES OF WOMEN AND CHILDREN.

### SECT. I.—MIDWIFERY AND DISEASES OF WOMEN.

ART. 83.—*On Inflammation and Ulceration of the Cervix Uteri in the Virgin Female, and its Connection with Leucorrhœa and Dysmenorrhœa.* By Dr. HENRY BENNET.

(*Lancet*, July 17, 1847.)

[AT the time of the publication of Dr. Bennet's admirable treatise on the above class of uterine diseases, from a defect in experience he was not able to state whether inflammatory affections of the cervix were frequent in the virgin state or not, but he was disposed to think that they were not. Subsequent experience has, however, convinced him that this opinion is unfounded, and he has ascertained that ulceration is not uncommon in the virgin, and that when present it is a frequent cause of menstrual disturbance, particularly of dysmenorrhœa and inveterate leucorrhœa. At the same time that he advances the above fact as an important step in the pathology of this period of female life, he does not disguise the difficulty which, from motives of delicacy far more imperative than in the married woman, surround the only certain means of investigation and treatment; and he therefore urges the necessity of a full acquaintance with the symptoms which should lead us to suspect inflammation and ulceration of the cervix in the virgin, in order that we may not, without good grounds, subject her to the disagreeable examination by the speculum. In furtherance of this object he writes as follows:]

In many of the cases that I have seen of ulceration in the virgin female, the most prominent symptom has been dysmenorrhœa carried to an extreme degree. Indeed, as I have already stated, I am convinced that many of the cases of extreme and obstinate dysmenorrhœa, which are at last considered hopeless, and merely palliated by narcotics, will be found on careful scrutiny to be cases of ulcerative inflammation of the uterine neck.

Some females suffer great uterine pain during menstruation, from the very commencement of the functions. It would seem as if, with them, the physiological congestion which is inseparably connected with menstruation could not take place without great pain being experienced. This may be either from the uterus being naturally morbidly susceptible to the stimulation occasioned by the presence of blood, or it may be that the monthly congestion is morbidly great. Whatever be the explanation of this fact, I have ascertained, by long and careful observation, that these females are peculiarly liable to uterine inflammation, and it is principally among them that I have found the cases of inflammation of the cervix that I have observed in the virgin.

When the cervix is inflamed and ulcerated, whether the menses have previously been easy or difficult, they generally become painful, sometimes agonizingly so, all the local pains above enumerated being much exaggerated, and extreme cutaneous tenderness being often experienced over the lower part of the abdomen, and sometimes all over the pelvis and thighs. From what I have stated, however, it will be evident that it is not the existence of pain during menstruation

that indicates the presence of ulcerative disease, some women always suffering pain, even in the absence of uterine inflammation, but the presence of pain, when it did not previously exist, and its increase when it did. In a word, to obtain any information that may avail for the purposes of diagnosis from the examination of the menstrual function, the previous uterine history of the patient must be interrogated. The physiological variations which occur in menstruation, both with reference to pain, duration, periodicity, &c., are much too great for it to be possible to establish any precise standard by which we may judge of the state of any given patient. It is with herself only, *when in health*, that we can rationally compare her if diseased.

In addition to the symptoms above enumerated (the local symptoms of ulcerative inflammation of the cervix uteri), there are the general symptoms to be considered, and they will often throw great light on the real nature of the case. It has not appeared to me hitherto, as I have already stated, that a mere white leucorrhœal discharge—that which I have described as often preceding and following the menses, or any occasional uterine congestion—reacts, to any very great extent, on the health, although it is universally considered to do so by all writers on female diseases. Such a discharge often exists in chlorotic, scrofulous, and phthisical females; but in them I believe it to be merely the result of irregular, disordered menstruation, itself caused by the general cachectic condition of the individual. In other words, I believe that in these cases the leucorrhœa is only one of the symptoms of a general cachectic, anemic affection, and not the cause of the anemia. In the absence of some tangible cachexia, I may say, that I scarcely ever meet with extreme general debility and weakness co-existing with leucorrhœa, without finding, on mature examination, that there is inflammation and, generally speaking, ulceration of the uterine neck. This is a clinical fact which admits of easy explanation.

When we consider attentively on what bases are founded the opinions that are now prevalent on this subject in the profession, it becomes difficult to reconcile them to pathological laws. Is it altogether consistent with our knowledge of the diseases of mucous surfaces to admit that a mere secretion from the mucous membrane of the female genital organs can, in the course of a short time, utterly deprave the functions of digestion and assimilation in a healthy young female, and reduce her to a state of extreme anemia? Such is certainly not the case with other extensive mucous membranes. Thus we often see a very abundant mucous secretion from the pulmonary surfaces, continuing for months or years, without the general nutrition being much impaired, especially when this exudation is not the result of inflammation, but of congestion—of increased vital activity only; in a word, a hypersecretion. But we can, on the other hand, easily understand that the presence of ulcerative inflammation in an organ so intimately connected by its sympathetic nervous system with the functions of animal life as the uterus may, and indeed must react, to a great degree, on the functions of assimilation and nutrition. This, in my opinion, is the true, the real, and the hitherto unknown explanation of the general vital depression of the weakness which is so frequently seen connected in the female with leucorrhœal discharge. It is not the discharge that reduces her vital powers to so low an ebb, but it is the sympathetic reaction of ulcerative inflammation of the uterine neck on the functions of life.

From these considerations I may deduce the following rule: that if, in addition to one or more of the local symptoms described (in the absence of any decided cachexia), there is also very marked general debility, it is a powerful reason for narrowly examining the nature of the case, as its very existence is a presumption that the patient is suffering from some deep-seated lesion of the uterus, and more especially from ulcerative inflammation of the uterine neck.

An attentive perusal of the above brief synopsis of the local and general symptoms of inflammatory ulceration of the cervix uteri will show the reader that very fair presumptive evidence of the existence, or non-existence, of the disease may be obtained, in many instances, without resorting to physical examination.

Whether the existence of the disease be considered certain or doubtful, an attempt may be made to cure the patient by simple palliative remedies, injections, rest, &c., if the circumstances of the case admit of delay; but if they do not, or if these means, having been tried, have failed, then a digital examination of the

uterine organs should be resorted to without hesitation. The welfare of the patient is the paramount consideration, and if it thus becomes absolutely necessary to acquire more information respecting the state of the uterus, all other considerations must give way.

A satisfactory digital examination of the uterus may be nearly always made in a virgin, without injury to the hymen, especially when the vagina and external genital organs have been relaxed by long-continued congestion and inflammation. The hymen is nearly always sufficiently dilatable to admit the index, introduced slowly and with proper care. Generally speaking, the os and cervix are reached with ease, the cervix not being retroverted, as it is when inflamed in most married females; and when once the finger has reached the os, nearly all doubts may be solved. If the cervix is free from disease, it is soft, and the os is closed; if it is inflamed and ulcerated, the cervix is enlarged, swollen, and the os is more or less open and fungous. This open and soft state of the os may also exist from mere inflammation of the cavity of the cervix.

When the existence of ulcerative disease of the uterine neck has been thus recognised in a virgin, what course must we follow? As this form of disease reacts so disastrously on the female economy as absolutely to endanger, indirectly, the life of the patient, not to speak of its making her a burden to herself, and to all around her; as, likewise, all non-instrumental means of treatment are totally inefficacious when the disease is severe, I think there can be no room for hesitation. The speculum must be used, without dividing the hymen, if possible; after its division, if it cannot be introduced otherwise.

In many cases, as I have before stated, the hymen is naturally very lax, or it may have been relaxed by disease: I have, therefore, had a very narrow, small, bivalve speculum made, with which I am often able to gently dilate the hymen, and examine the patient without any preliminary division. When, however, this organ is fleshy or inextensible, which it generally is in females rather advanced in life, it does not yield, and it becomes necessary to divide it. This may even be necessary in order to be able to admit the finger. In a case in which I was consulted lately, the vaginal orifice was not larger than a crow-quill; the patient, a young person aged 19, was rather stout and muscular. If it thus becomes necessary to divide the hymen, the incisions may be made on each side, but that which gives most room is one made in the median line, inferiorly, in continuation of the raphe of the perineum, owing to the extensible nature of the soft tissues at the lower commissure of the vulva. This is also the region where the hymen is naturally the most fleshy and the thickest. If possible, it is as well to allow the divided surfaces of the hymen to heal before any attempt is made to use the speculum, in order to avoid giving useless pain to the patient. The healing of the incisions may be promoted by touching them once or twice with the nitrate of silver. Unless this precaution be adopted, the cicatrization is apt to be tedious.

Once the nature of the disease has been recognised, and its extent and character have been instrumentally ascertained, the case falls into the general category of ulcerative inflammation, and the treatment must be conducted on the principles which I have repeatedly laid down in my previous writings on this subject. The only important peculiarity which I have remarked in this disease in virgins is, that it generally presents itself under the acute or inflammatory form. The cervix is enlarged; but it is generally the swelling of congestion and inflammation, not the chronic nutritive hypertrophy so often observed in married females. The ulceration is also, generally speaking, vascular, irritable, and inflammatory. This peculiarity, however, is not an unfavourable one, as these cases are precisely those which yield the easiest and the readiest to antiphlogistic treatment, coupled with mild cauterization. I have, nevertheless, met with one very intractable case. The patient was forty years of age when she came under me, and had been a sufferer very many years. The cervix was chronically hypertrophied to a considerable extent.

I am aware that the foregoing details will be read with considerable surprise, even by those practitioners who have paid the most attention to uterine diseases. They are, however, the expression of facts, and as such must necessarily be accepted eventually by the profession, as soon, indeed, as the subject is properly investigated, when much suffering will be alleviated. I have now by me the



notes of seven cases of severe ulcerative inflammation of the uterine neck in virgins, which I have observed and treated within the last year, four of which occurred in private practice, and three at my dispensary. In all these cases the patients had been ill for years, the symptoms which they had presented having resisted every attempt at treatment. Most of them had been under the hands of very able and experienced practitioners, who had brought to bear on their cases all the information of which the profession is at present in possession. Nevertheless, their sufferings had gone on increasing, the general health had become more and more debilitated, and it is certain that they must have eventually sunk, directly or indirectly, if the real cause of their illness had not been discovered and remedied.

Experience having thus taught me that severe ulcerative inflammation of the cervix uteri is occasionally met with in unmarried females, that it is then the cause of great functional uterine disorder, and of extreme debility, and that by physical examination only can the disease be fully recognised and treated, I have no hesitation in stating that such an examination, in these exceptional cases, becomes imperative. As, however, an investigation of this nature is a serious matter, and must be equally repugnant to the feelings of the medical practitioner and of his patient, it should only be resorted to as an extreme measure—as a last resource. No practitioner, either, who has not acquired an accurate knowledge of these forms of uterine disease in married females, ought, in my opinion, to resort to it on his own responsibility, as he may by so doing unnecessarily expose his patient and her friends to great mental distress, through his ignorance of the real meaning of the symptoms which she presents. It is only by habit that the finger becomes educated to these diseases, and acquires that delicacy of tact which enables the practitioner to discover ulceration of the cervix by digital examination; and unless, on the other hand, the finger has detected, nearly to a certainty, the existence of extensive ulceration, no practitioner would feel warranted in adopting such measures as the division of the hymen, and the subsequent use of the speculum.

ART. 84.—*On Inflammation and Ulceration of the Cervix Uteri in Females advanced in Life.* By Dr. HENRY BENNET.

(*Month. Journ. of Med. Science*, March 1847.)

Inflammation and ulceration of the uterine neck is not confined to young and middle-aged females; it is occasionally met with in women rather advanced in life, and who have long ceased to menstruate. Nor can we feel surprised that it should be so, when we consider that inflammation is a morbid process, which may attack the tissues and organs of the animal economy at any period of their existence. Anatomical and physiological peculiarities may render its manifestation rare in some organs during certain periods of life, but they cannot shield them entirely from its influence. Before menstruation has set in, and after it has ceased, the uterus and its appendages are in a state of repose, of low vitality, which renders them much less liable to inflammation than during the age of sexual activity. But even at that period the uterus, and more especially the mucous membrane covering its lower segment, is occasionally the seat of inflammation; ulcerative inflammation of the cervix uteri existing years after the cessation of the catamenia may, nevertheless, be considered a comparatively rare form of disease. When I have met with it, generally speaking, it has seemed to be the lingering remains of inflammatory disease present at the time the menses ceased. In a few cases it has appeared to have originated spontaneously, and in a few others I have known it to occur as the evident result of neglected gonorrhœa.

When menstruation ceases, the uterus and ovaries gradually fall into a state of atrophy. This gradual atrophy of the uterine system exercises, I have no doubt, a most salutary influence over any local inflammation that may then exist. Under its influence, I feel certain, very many females gradually recover from unrecognised uterine inflammation, which has for many years inexplicably rendered life a burden to them. Indeed, it stands to reason that if women so situated escape the dangers of cancerous degenerescence, which is always to be feared, the absence of the menstrual flux will materially change the pathological condition. The uterus being no longer subject to the periodical congestions which render its inflammations so difficult and so tedious to subdue, the disease, no doubt,

in many cases, gradually wears itself out, and thus a spontaneous cure is obtained.

In some instances, however, this desirable process only takes place partially. The gradual atrophy of the uterus, now become nearly a useless organ in the economy, is still called into action; it limits the disease, diminishes the hypertrophied tissues, and partly heals the ulceration, but it has not the power to completely cure the disease. The latter still lingers on, giving rise to the greater part of the symptoms which are usually observed in this form of inflammation. The most constant and the most prominent symptom is generally the pain in the sacrum, or lower part of the back. The pains in the ovarian regions, and in the hypogastrium, are also occasionally complained of, but by no means so universally. The peculiar backache of uterine diseases has appeared to me, as a general rule, much more intense in women thus advanced in life than in younger persons, although the latter may present much more extensive disease. Sometimes a leucorrhœal discharge is complained of by the patient, but not always. This fact admits of easy interpretation. The ulceration being often small, and there being but little vaginitis, there is no great amount of mucus formed, and what little is secreted is absorbed by the parietes of the vagina. As might be anticipated, the patient seldom experiences much bearing down. The inflamed cervix being more or less atrophied, as well as the uterus itself, the latter generally retains pretty nearly its normal position in the pelvis, not falling, as is the case with younger women, when the cervix is hypertrophied.

On examining digitally and instrumentally, the cervix is found small, indurated, sometimes lobular, (but in that case the lobules are regular, and their divisions radiate towards the centre.) the os is slightly open, and presents within its contour the velvety sensation of ulceration. The vagina is in some cases rather rosy and congested, whilst in others it presents the blanched appearance peculiar to it in advanced life. To the eye the cervix appears of a vivid red hue, and the ulcerated surface seems irritable and angry; the granulations are small, and there is no appearance of luxuriance or of fungosity about them. The cavity of the os is closed at a short distance from the external orifice. There the physical characters of inflammatory ulceration of the cervix, at an advanced period of life, are the same, however the disease may have originated. They are often accompanied by considerable sympathetic disorder of the general health, especially when the pain in the back is very continued and very severe, which, as I have stated, is not unfrequently the case.

I have found this form of ulcerative inflammation much more intractable, and much more difficult to cure than that which is met with in younger females. It may be, that the very circumstance of the disease having withstood the influence of the changes that take place in the uterine system on the cessation of the menses, stamp it as of an intractable nature; or it may be that chronic inflammation once established in a mucous membrane of a person advanced in life, has a greater tendency to resist treatment, and to perpetuate itself, than it would have in a younger subject. Whatever the interpretation, the fact is certain. A small ulceration, the size of a fourpenny-piece, resting on an atrophied cervix, will resist the most energetic treatment for months, giving rise, at the same time, to the most extreme pain in the back and sides.

The treatment which I adopt in these cases is similar to that which I follow with younger patients, and consists in repeated cauterization with the nitrate of silver or the acid nitrate of mercury, leeches, astringent injections, rest, and attention to the general health; and, generally speaking, averse to resorting to deep cauterization, owing to the ulceration not resting on a larger hypertrophied basis; and when I do resort to it I prefer the actual cautery to the Vienna paste. A very light touch of the cautery will produce a considerable change in the vitality of the part, and yet only be followed by a superficial eschar. I have now under my care a woman, aged 52, who ceased to menstruate some years ago, and whom I had been treating for several months without having succeeded in finally healing the ulcerated surface, when I resolved to use the cautery. Within ten days after the separation of the eschar the sore has all but healed.

ART. 85.—*On Ulceration of the Cervix and Os Uteri as an Occasional Cause of Dysmenorrhœa.* By SAMUEL EDWARDS, M. D., Physician to the Dispensary, Bath.

(*Prov. Med. and Surg. Journal*, Sept. 8.)

[The following paper is noticed rather as affording a favourable evidence of the increased attention which the diseases of the os and cervix uteri are receiving than as advancing any new facts. The frequent dependence of dysmenorrhœa upon ulceration of the os uteri has been insisted upon by Dr. Bennet in a previous article, and, as may be seen by a reference to our Report, is prominently treated of by Mr. Whitehead. The author introduces the subject by some remarks connected with the use of the speculum, in which we entirely agree: and to the effect that the objection on the score of delicacy is greatly exaggerated, and indeed is frequently maintained by the failure on the part of the practitioner to urge the importance of the examination. We can truly affirm that in our own practice we have never met with a refusal even on the part of the most delicately educated female, when she has been made to comprehend the necessity for the operation; but, on the contrary, have frequently been surprised at the unexpected readiness with which it has been consented to. After some preliminary observations to the above effect, the author thus proceeds:]

Having during several years availed myself of many opportunities of examining diseased conditions of the cervix and os uteri, and having preserved accurate notes of many of the most important cases that have fallen under my notice, I prefer exemplifying by two or three of them some of the causes, and the symptoms and treatment of simple or inflammatory ulceration of the os and cervix uteri, thus showing how readily these evils are under the control of medical art when attacked by judicious topical applications. The first case, which I shall now relate, I have taken care to be more minute in, as it well illustrates the symptoms, general and local, which the mischief sooner or later is sure to produce; the others I shall give less in detail, as this will be sufficient for the object I have partially in view, viz. to confirm the statements as to the ready curability of these evils by such means as are referred to by Lisfranc, Jobert, De Loury and Peraire, and since made more particularly, perhaps, known by Dr. Henry Bennet.

I. The case just referred to is that of a lady, 24 years of age, usually of robust health. A few days after marriage she was attacked with severe inflammation of the vagina and vulva, whilst in London, and there treated very judiciously by a surgeon. A slight leucorrhœal discharge, however, continued on her leaving the metropolis, and existed more or less for thirteen months, at which time she first came under my notice. During a portion of this interval she had been attended by a friend in Brighton, from whom she received some little relief. On her applying to me she complained of a constant pain in the loins, a sense of heat and dragging in the pelvis, and sexual intercourse during this period had been at times extremely painful; the leucorrhœal discharge was abundant, of a dirty-yellow colour, and occasionally sanguineous; her health had suffered much, and she had become nervous and dyspeptic; her tongue was pale, and furred in the centre; pulse quick and irritable. Menstruation had always been natural, but since her marriage *she had always suffered much pain.* The usual treatment having been had recourse to previously, and an examination only by the finger having been proposed and adopted, I recommended the employment of the speculum, which was immediately acquiesced in. The annoyance of the disease to both husband and patient prevented, I may remark, a false delicacy from stepping in the way to a chance of relief. On the introduction of the finger the vagina was found relaxed, the upper part irritable, and hotter than usual; the os uteri was high, and directed backward; the cervix was large, and of an ordematous feeling, the anterior lip being most so; on the finger being carried over it, an inequality was observed, a part appearing rough, which was more sensitive than the remaining portion. This was more apparent towards the os uteri.

The speculum revealed an inflamed appearance of the cervix, as evidenced by its red and shining hue. The anterior lip which first came under view was seen ulcerated to about the size of a shilling, being depressed a little below the surface, and covered with dark red granulations, which bled on the slightest touch of the



speculum. The os uteri to one-half its circumference was surrounded by the ulceration, and from the orifice flowed a small quantity of milky-coloured mucus, a proof, as it is asserted, and I believe correctly, that the neck of the uterus partakes of the mischief.

The mucus having been wiped away from the part, I applied the nitrate of silver thoroughly, and introduced it a line or two into the os uteri. Little or no pain was occasioned. An injection of decoction of poppy, to be used twice a day, and a mixture of infusion of gentian, with solution of potash and tincture of henbane, were ordered. Six days after, improvement had taken place, the secretion was less, and the ulcer certainly contracting; the eschar had come away on the fourth day. The decoction of poppy was changed for an injection of the diluted compound alum solution of the London Pharmacopœia; the mixture to be continued, and a pill, containing a grain and a half of mercurial pill and extract of henbane, requested to be taken every alternate night. Rest in the horizontal posture and freedom from all sexual excitement were enjoined. From this period I used the nitrate generally, with two exceptions, twice a week for seven weeks, when the ulceration had entirely disappeared, as also the leucorrhœa; the softness of the cervix had returned fully, and its size was considerably diminished; the dyspeptic symptoms had all abated, and she had progressed equally in strength. This patient left Bath in February last. Two months after she became pregnant, and she still remains free from the old complaint.

II. The second case is that of a patient I attended at the Eastern Dispensary of Bath, unmarried, aged 31. She had been confined, after a long and lingering labour, in Bristol, six months previously: she soon recovered, in a week being up and about her usual avocations. After the lochia had disappeared a leucorrhœal discharge set in, accompanied with pain in the back, and a bearing down. She was attended professionally, but received little benefit. About two months prior to her applying to me, blood appeared with the discharge at times, and to the extent of several ounces. This continued up to the time of my first seeing her, when she was weak and much emaciated; complained of headache and loss of spirits and appetite. On examination, the cervix was found low in the vagina, greatly enlarged, and considerably indurated. The speculum discovered an ulceration of at least an inch in its widest diameter on the right side of the cervix, covered with florid granulations, and raised above the margin of the surrounding texture. The mucous membrane was much injected, the os uteri open. In this case also the nitrate of silver was freely applied, and rest enjoined. A sulphate-of-zinc injection, and the usual remedies for restoring the lost tone of constitution, were prescribed. After nine weeks' treatment (the nitrate having been applied over the whole of the cervix once, occasionally twice a week) the ulceration was healed, the leucorrhœa with its accompanying symptoms had left her, and her health was vastly improved. I examined this patient about three weeks after she had ceased attendance at the dispensary, and found the cervix in a normal condition and position.

III. Case third is that of a lady, aged 40 years, mother of six children, who applied to me in April, 1845, under the following circumstances: In January of the year previous she became pregnant, and soon after leucorrhœa set in, accompanied with pain in the hypogastric region, a sense of weight on standing, and great irritability of the meatus urinarius, causing frequent desire to micturate. These symptoms continued without medical advice, and on May 7th she aborted; a large quantity of blood was lost, and for three weeks she was confined to her bed or couch. After this most of her former symptoms disappeared, excepting a slight dragging sensation of a sickening character, as she described it, whilst standing long, especially if she had previously walked. In the November following she again became *envelope*, and about two months after the old symptoms reappeared; and not valuing them as she should, she allowed them to continue without seeking advice until the commencement of March, 1845. At the fifth month she again miscarried. The uterine symptoms continuing, I was consulted in April. I found the digestive organs disordered, and her general health was unsatisfactory. She complained of deep-seated hypogastric and lumbar pains, and a distressing sensation on standing; the leucorrhœa was trifling. On examining, the cervix was found lower than usual, and its density as well as volume in-

creased; it had much resistance, and was tender. The speculum disclosed the os uteri patulous and entirely engaged with ulceration, extending from which were two small patches of ulceration, about the size of a fourpenny-piece, the one anterior, the other on the right side of the posterior lip; both had dark red granulations, much depressed below the surface of the surrounding part, and bled on the speculum pressing. The whole of the cervix and upper third of the vagina were much congested; the former I freely incised in several places, which bled freely. A warm bath was ordered, and a warm opiate injection to be used night and morning; a mild laxative was prescribed, and rest enjoined.

Three days after this I again examined; the congestion was much relieved; the nitrate of silver was now first applied to the ulcerations, as well as slightly to the whole cervix and upper fourth of the vagina. Oxide of zinc with extract of conium was ordered twice a day, and a grain of the mercurial pill every night. This plan of local treatment was continued to the commencement of July, when the volume and density of the cervix had considerably lessened; the ulcerations had healed, with the exception of the margin of the os uteri, which was still ulcerated and open; the pencil of nitrate of silver was introduced about two lines, and repeated five times, when all *visible* mischief disappeared. There still, however, continued a muco-purulent fluid exuding from the os uteri, and accordingly I introduced a probe with a little lint, wetted with a solution of the nitrate, on three occasions, at a week's interval, when the character of the discharge altered to that of a transparent mucus. In the November following she became pregnant, and in August, 1846, I attended her at the full time in her accouchement.

IV. The next case is that of a female, 46 years of age, mother of two children; has been a widow two years. A bearing down and leucorrhœa have afflicted her for three years; she has procidentia uteri, but no complete prolapsus; menstruation is not deranged; complains of pain in the back and behind the pubis, aggravated when the bowels are relieved. The discharge varies; sometimes it is white and very abundant, at others thin and streaked with blood, but never offensive. She had previously been healthy and stout, but now is much emaciated. She has had many remedies tried, but the disease was never investigated by the speculum. Examining with the finger, the vagina was very relaxed; the cervix uteri very large, and a little indurated; the os patulous, and its edges thick. There was little tenderness except over the posterior lip, where the speculum discovered a large irregular ulceration, an inch in its longest diameter; the granulations were numerous, and on a level with the surrounding part. The nitrate of silver was applied freely over the whole cervix; an injection of nitrate of silver was prescribed, and the citrate of iron ordered twice a day; the cold hip-bath directed to be used if practicable. The caustic in this case was applied at intervals of a week (occasionally oftener) for six months; during one month of this time a vaginal suppository of belladonna and mercurial ointment was inserted every other night. At the end of this time, the ulceration had healed, the discharge had all but ceased, and the system had recovered a healthy tone. The size of the cervix and body of the uterus had much diminished, as evidenced by examination, as well by the rectum as by the vagina. The procidentia was so much relieved that she could walk about with comfort without the aid of any bandage.

V. The last case is that of a young woman, aged 32 years, at present under treatment at the Eastern Dispensary of Bath. I am desirous of relating it, as it presented the most extensive ulceration I have met with in a young unmarried woman. I have made many inquiries relative to her character, and believe her to be a highly respectable and chaste young female. She applied to me on the 11th of June, at the request of the physician who last attended her. She states she has been suffering from constant pain in the back: a burning deep-seated pain in the pelvis; a discharge, muco-purulent in character, and varying in quantity, occasionally tinged with blood; and debility upon the increase between three and four years. During this time she has been the patient of several of the Bath medical practitioners of the highest repute. Two of these gentlemen diagnosed ulceration of the uterus, and treated it with astringent injections, and the system with tonics generally. The circumstance just mentioned I wish to call especial attention to, as it shows to how lengthened a period ulceration may extend unless topically treated, and how rapid the cure when such treatment is put in operation.

At the time of this patient first applying to me, the symptoms above mentioned were in full vigour, added to which, she mentioned that walking had been so painful as almost to be impracticable, and that there had been much dysmenorrhœa, which had increased during the last twelve months. Prior to her first noticing her uterine symptoms, menstruation was always perfectly natural. Dyspeptic symptoms had also become very prominent. An examination with the speculum was at once permitted on an explanation of its uses, and the probable benefit which would accrue to her. The vagina was small, and along its upper half of a red purplish hue; the cervix was tumefied but soft, and of a uniform red colour; the anterior lip was the larger. The os uteri was patulous, and its whole margin ulcerated; the ulceration extended in an irregular way over nearly one half of the posterior portion of the cervix, and was uneven and very deep. The touch of the speculum was painful and occasioned a little blood; the same effect was produced by the slightest touch of a piece of lint. The mucus from the os uteri was of an opaque white colour. I immediately applied the lunar caustic to the whole of the ulcerated cervix; no pain was occasioned; an injection of sulphate of zinc and opium, and a mixture of the infusion of gentian, with solution of potass, were prescribed, as also a pill every other night of mercurial pill and extract of hemlock.

On the 22d she again attended, when she stated all her symptoms had abated; the ulceration and tumefaction of the cervix were decidedly diminished. The caustic was again applied, and from this time was used twice a week, (with one exception during menstruation, which, by-the-by, was attended with considerably less pain.) up to the 13th of this month, when the cervix was seen reduced to almost its normal size, and the whole of the ulceration healed, except that round the os, which had become superficial. The cervix and mucous membrane of the vagina had resumed their dull pale colour. The system generally had become strengthened, and the dyspeptic symptoms had all but vanished.

[Upon these cases the author founds the following remarks, premising that each may be considered as a type of a class of cases of which he has met with numerous examples.]

In the first case described, the cause of the ulceration was evident, arising from vaginitis, extending to the cervix uteri,—a not unfrequent occurrence in a greater or less degree in the early days of marriage. A prominent symptom during the thirteen months prior to my seeing her was dysmenorrhœa, a circumstance to which I shall refer by-and-by, and to which I would peculiarly call your notice. It is interesting also to observe that this patient remained sterile during the time that the disease was existing; but, about six weeks after the cure was complete, pregnancy took place. The same cause of which I shall speak by and by, in relation to dysmenorrhœa, will readily account for it.—viz., the partial blocking up of the uterine neck by congestion, and the muco-purulent discharge. Dr. Bennet, in his treatise, states that he is inclined to believe that pregnancy does not take place whilst the patient is suffering under this disease, but he has since narrated, I think, a case, and one in my own practice clearly proves its occurrence. I have been asked whether the introduction of the caustic pencil into the os uteri does not tend to contract or altogether close up the passage. The above case, with others, sufficiently answers the query.

In the second case narrated the symptoms came on directly after a tedious labour, where, doubtless, excoriations of the os uteri had been produced. Getting about again earlier than consistent, congestion was favoured, the lacerations did not heal, and thus inflammation and ulceration succeeded. Pregnancy certainly predisposes to this affection, and a laborious labour or abortion is sure to occasion congestion, and very frequently excoriations around the cervix.

In the third case related, abortion was evidently occasioned in two instances by the disease; and it is worthy of remark, that the second pregnancy appeared to light up the disease after it had apparently been cured. This we should *a priori* anticipate, that congestion, or aught that favours increased circulation in the part, might develop or encourage the continuance of it. I cannot speak positively, but there is every reason to believe that this individual became pregnant whilst suffering in a slight degree from the evil.

In the fourth case, a procidentia uteri existed as an effect of the disease; the body and cervix uteri were in a condition of chronic hypertrophy, and it must be



apparent to every one, knowing how the uterus is balanced, as it were, in the pelvis, how readily the slightest change in its volume is liable to alter its position. I feel confident that many, very many, cases of procidentia uteri may be traced to this cause. I may remark that I have found the employment of vaginal suppositories most beneficial in uterine diseases: the use of them in the case before us was of marked benefit in diminishing the size of the cervix, and relieving irritation.

The last case I have drawn up to exhibit the extent at which the disease will arrive in a young unmarried woman, and to show how inefficient treatment is that is not directed to the seat of the disease. At the end of the six weeks during which this patient has been subjected to the cauterization, she is comparatively well: the improvement, too, in her general health has kept pace with the local improvement. I have also related it to show peculiarly a connection between ulceration of the neck and dysmenorrhœa. I have for some months noticed this connection in several cases which have fallen under my observation, but especially so in the case before us, and also in one other which I regret to say I kept no notes of. It was in a lady of 27 years of age, who had suffered from dysmenorrhœa in an extreme degree for six years. Many and various had been the remedies advised by almost as many medical men, when I proposed the employment of the means recommended by the late Dr. Mackintosh, of dilating the os uteri by the aid of bougies, which I had long desired to put in practice. An examination, however, with the finger discovered to me an irregularity and tenderness about the os uteri, the whole cervix appearing swollen. The symptoms which she certainly had of ulceration were all saddled by me upon the dysmenorrhœa. This being the case I had a small speculum made, and on introducing it found the margin and neighbourhood of the os superficially ulcerated. I applied lunar caustic, and had the satisfaction of seeing her entirely cured of her dysmenorrhœa in about three months. I was thus led particularly to notice the symptom of painful menstruation in all the cases I have since had of congestion and ulceration of the neck of the uterus, and in those where the uterine passages were most concerned this symptom was prominent. Such being the case, might not many of the most obstinate cases of dysmenorrhœa that we meet with be thus accounted for, and thus relief obtained for that, "the frequent return of which," as Dr. Mason Good says, "embitters the life of the patient?" Certain it is, the case I just spoke of I at first treated as a case of dysmenorrhœa, thus mistaking a symptom for the disease. In this fifth case at the dispensary, I should assuredly have done so too, had not my attention been previously aroused. These observations seem to confirm the views of the late Dr. Mackintosh and of Professor Simpson, that dysmenorrhœa is sometimes caused by a naturally contracted uterine passage. This cause cannot be difficult of explanation, when we remember that the contracted cervix may become more contracted, and perhaps closed by the congestion which occurs at the catamenial period.

[Dr. Edwards has only used the nitrate of silver as a caustic, regarding the operation of nitric acid and potassa fusa as violent and uncertain. His paper terminates with the following aphorisms:]

1st. That dysmenorrhœa is occasionally only a symptom of disease arising from congestion and ulceration of the os and cervix uteri.

2d. That sterility is a frequent attendant, though not a necessary condition, the mechanical obstruction being sufficient to account for it as well as for the dysmenorrhœa.

3d. That abortion is occasionally produced by it.

4th. When the os uteri, as well as the cervix, is ulcerated, the mischief extends from the former to the latter. The os uteri is generally the last to yield to remedies.

5th. That in the generality of cases that have occurred to me the nitrate of silver has answered all the purposes of an efficient caustic.

ART. 86.—*Treatment of Inflammatory Induration of the Cervix Uteri by deep Cauterization with Potassa Fusa.*—Dr. Simpson states, in "The Monthly Journal of Medical Science," that he agrees with others in regarding the general dependence of leucorrhœa upon inflammatory ulceration and induration of the cervix uteri. The

cure by the application of leeches, counter-irritation to the sacrum, &c., is tedious. Various local escharotics—partly to destroy the indurated tissues by direct decomposition, and partly to soften down the remainder by new inflammatory action—had been in modern times employed for the same purpose, and with much more certain and expeditious effect. Dr. Simpson has found the common potassa fusa far more manageable, speedy, and certain than any other method. He used it through the speculum, applying a stick of it freely with a proper caustic holder to the ulcerated and indurated tissues. It required to be rubbed, or held *strongly* for a time, against the part which was to be destroyed. In general a piece, three quarters of an inch or an inch long, was melted down. The decomposition produced by it often caused a hissing sound. If the induration is extensive, and the whole cannot be removed at once, increased action and absorption are set up in what remains, and the parts adjacent become softened and diminished in size. Absorption in this way was truly one of the results of inflammation, though still an undescribed termination. In some aggravated cases, two or more applications of the caustic are required, at intervals of eight or ten days. Pelvic cellulitis, or any other bad result, has never been seen to follow. The appearance after the operation is as if a portion had been clean cut out with a knife. A large quantity of vinegar and water is immediately thrown up through the speculum to neutralize the potassa, and prevent it from injuring the sound parts. A copious purulent discharge usually follows for several days, requiring the use of astringent washes, or zinc ointment pessaries. When the whole of the induration is once removed, the remaining ulcer heals rapidly and permanently. An ulcer over a diseased part may be cicatrized, but it is almost sure to break out repeatedly till the induration is reduced.

[The "Lancet" of this date (July 1847) contains what is intended to be a critique upon the above treatment, but as the writer's name is not quite so well known as Professor Simpson's, his animadversions will, we imagine, attract but little attention.]

ART. 87.—*Singular Case of Delivery, at Full Term, without Operative Aid, through a Pelvis diminished by Malacosteon to a transverse diameter under 1 inch, long diameter of 2½ inches.* By Prof. SIMPSON.

(*Monthly Journ. of Med. Science*, July 1847.)

[After some preliminary remarks as to the diminished diameters of the pelvis, which have been by older obstetrical authorities considered as calling for the operations of embryotico and the Cæsarean section respectively, the Professor relates the following unique case, the details of which we slightly abridge:]

Mrs. D., at 34, whilst in early life, at the age of 24, and two years after marriage, became the subject of malacosteon, from which she became so deformed as to have shrunk from an average height to a dwarf-like figure of four feet in height. Up to June 1846, she had never been pregnant, but at that time she became so.

At the time of her bespeaking the attendance of Mr. Wiseman, a vaginal examination was made, and it was ascertained that the pelvis was distorted, but that induction of premature labour was out of the question, from the date of the pregnancy. In March 1847, she was seen by Dr. Simpson, who gives the following account of her:

The uterine tumour was high and pressed to the right side; the foetal pulsations were distinct. The sacrum was straight above, so that its promontory did not probably encroach on the groin, but its inferior extremity was much curved forwards. The transverse diameter was so diminished as to render it impossible to introduce two fingers between the tubera ischii; hence this diameter was evidently under an inch. Posteriorly, or opposite the sacro-sciatic ligaments, there was transversely more space, but the strong anterior curvature of the coccyx served to curtail this diameter, and to prevent the probability of its dilating to three, or at most four fingers' breadth.

Under these circumstances, with a living child of eight months, Dr. Simpson concluded, as all the patient's medical advisers had previously done, that the

Cæsarean section was the only practicable mode of delivery. Nature, however, provided for the mother a more safe method.

Having agreed to operate by the Cæsarean section, Dr. Simpson proceeded to the patient's house (a distance of 30 miles) on receiving a note from Mr. Wiseman, stating that labour had commenced; but to his great astonishment learned on his arrival that the woman was delivered, and without instrumental aid of any kind. The circumstances were as follows:

The infant had been dead, *in utero*, for some time; it appeared of its natural length, measuring  $18\frac{1}{2}$  inches from the crown to the heel, but it was atrophied to a great degree, weighing only three pounds two ounces. The head seemed large, but its increase was due to putrefaction. The brain was diffuent, and the head had the appearance of an elongated and flattened body, half filled with fluid contents; and such, in fact, it was, for all the cranial bones were separated, and floating in the liquefied cerebral matter. The chest and abdomen were also pliable, but not in so disintegrated a state as the head.

This condition of the *fœtus* afforded an easy explanation of its transit through the mother's deformed pelvis; but in order to have ocular proof that the *fœtus*, even in that state, could pass through so small an opening as the mother's pelvis was known to be, Dr. Simpson procured some iron plates, which he had perforated into oblong openings of  $2\frac{1}{2}$  by  $\frac{7}{8}$  of an inch, and through this the child was drawn without difficulty. The placenta was atrophied. The recovery of the mother was uninterrupted.

[Upon this case Dr. Simpson remarks as follows:]

1st. It has taught me, and is calculated to teach others, a strong lesson of caution in regard to *prognosis*, under apparently the most desperate circumstances.

2d. The case affords a striking illustration of the well-known remark of Denman, "That the resources of nature in everything which relates to parturition are infinite, and constantly exerted for the preservation both of the infant and parent, yet when the two objects are incompatible, the life of the child is almost uniformly yielded to that of the parent." The modes in which nature brought about this unexpected result in the present instance are worthy of special notice. For, *first*, she set up diseased action in the placenta, which prevented the proper nourishment and growth of the *fœtus*. *Secondly*, she carried this state of marasmus to such a degree as at last proved fatal to the child, without inducing that expulsive action which generally soon follows the death of the infant. *Thirdly*, the dead infant was retained so long a time, that not only the bones of the cranium, but those of the face and base were separated from each other, and the head and other parts of the body rendered compressible. *Lastly*, the emaciated and putrid mass was finally expelled by natural uterine contractions. Each step in this process was thus necessary for the success of that which followed.

3d. Does this case suggest to us modes of practice in similar complications? The case shows that a child may pass through an opening of very small dimensions, provided it be in a compressible state. So far it evidently suggests that the induction of abortion at the fourth or fifth month, when the head of the *fœtus* is still soft and reducible, would succeed, in such extreme deformities, in saving the mother many of the dangers which accompany delivery at a later period. [In the present case this time had long gone by when the patient first applied for assistance.] The induction of premature labour at the seventh month would not, of course, have sufficed with a pelvis of so small dimensions, unless we could modify the operation so as to produce the death of the child, and also to cause its retention in the uterus. Now, we have no means of inducing the alteration in the placenta; nor am I acquainted with any measures which would destroy the life of the infant without at the same time inducing labour. The retention, however, of the *fœtus* and its putrefaction would be as necessary to success as its death.

*Lastly*. Suppose a patient with a very deformed pelvis to have arrived at the full term of *utero-gestation*, does this case suggest any new principles or modifications of treatment for the delivery of the mother? Under these circumstances our practice should be, in a great degree, regulated by the state of the child. If it be alive, and the pelvis is as small as in the present case, or even half an inch larger in its measurements, then I believe it is our duty to perform the Cæsarean section. But we will suppose the child to be dead. In this case most British accoucheurs



would attempt delivery by craniotomy, if the dimensions of the pelvis at all permitted it. And the present case seems to suggest one means of rendering it thus possible, under a degree of contraction in which the operation is at present regarded as totally inapplicable.

[The great obstacle to delivery by embryulcio arises from our want of means of reducing the size of the bones of the face and base of the skull, as, in the present case, was effected by nature. Dr. Simpson inquires whether some instrument might not be invented by which this could be accomplished, and thinks that some form of bone forceps might answer the purpose.]

ART. 88.—*Abdominal Tumour mistaken for Pregnancy.*

By JOHN CHALLICE, Esq.

(*Lancet*, Oct. 16, 1847.)

[The following case is one of great practical value, and displays forcibly the great difficulty which surrounds the diagnosis of pregnancy. It would, perhaps, be difficult to meet with an instance affording stronger circumstantial evidence of that condition.]

Mr. Challice received an urgent message to visit a young lady, said to be labouring under cholera, but from hints received from the maid-servant he was induced to suspect the possibility of pregnancy.

When he arrived he saw a young female in bed, lying on her right side, with her face buried in the pillow, and the knees drawn up towards the abdomen. She seemed to be in pain, but was sullen, and refused to answer any questions. The mother stated that she had been vomiting, and complaining of pains in the loins, with a constant desire to pass water, and that for the last five or six months she had observed a change in her daughter—the appetite capricious, temper irritable, and on several occasions she had been surprised in tears; notwithstanding, she denied being ill, and continued to perform her domestic duties. These facts seemed confirmatory of the servant's suspicions, and with almost a conviction in his mind of the condition of the girl, the author placed his hand upon the abdomen; it was tense and swollen, and a movement like that of a living fœtus was distinctly felt; he then listened and detected a loud and quick pulsation.

The presence of these symptoms induced him to pronounce the patient pregnant. No suspicion had entered the mother's mind; she was an only daughter, and bore an excellent character. However, she did not deny the fact, but after a distressing burst of grief, and a pitiable appeal for forgiveness, she confessed that her cousin had had connection with her once, and only once, about six months before, a few days previous to his departure from England. Being unwilling to aggravate her sufferings by what appeared unnecessary inquiries, or to disturb the patient by further and more careful examination, considering the case quite decisive, Mr. Challice contented himself with prescribing some simple remedy for relieving the sickness and pain. The next day there was a great improvement in the condition of the patient; the fear of discovery no longer agitated her, and she had been forgiven. Up to this period she had so contrived to compress her figure, that no increase in her bulk was perceptible when dressed, although her size was quite that of the sixth month of gestation when undressed. Now that this cruel mental and physical restraint no longer tormented her, she suffered less from pain and sickness, became less sullen, and more communicative.

It appears that the connection took place, after prolonged resistance, just previous to the usual period of menstruation; that up to that time there had never been the least irregularity of this function during the three years she had menstruated.

She was greatly alarmed at the absence of the accustomed appearances at the usual time, and did not feel well in health, although she had no marked symptoms; a general sense of uneasiness, with pains in the loins, and an occasional slight feeling of sickness and loss of appetite, were felt. When the next period came round, she was pleased at finding herself "unwell," but only to about half the usual extent; menstruation had continued regularly up to the time Mr. Challice saw her; on each occasion, however, more and more scantily. The abdomen had gone on gradually increasing in bulk, and about five months after the connec-

tion the patient was conscious of a movement and pulsation in the abdomen, and believed herself pregnant. The breasts were small, and marked with an indistinct areola; around the eyes and mouth there were dark circles, and her mother said she had much fallen away in flesh. Previous to this unfortunate occurrence, the patient not only enjoyed good health, but was remarkable for strength, endurance, and activity, inclined to *embonpoint*, full of life and spirits, and in her nineteenth year.

During the next month or six weeks Mr. Challice saw the patient occasionally. She complained of no urgent symptom, walked out now and then, had a good appetite and digestion, with sometimes slight irritability of the bladder, and irregularity of the bowels. The gradual increase in size still went on, and the mother (who now slept with her daughter) said that the movement of the child continued. The patient complained of its violence when in bed, and also began to suffer from lumbar pains and constant irritation of the labia, which was much increased when she drank beer, wine, or spirits. And so the case went on.

When the ninth calendar month had nearly expired since the connection, Mr. Challice became much interested in the case, thinking it one in which the period of gestation could be accurately ascertained.

On the evening of the expiration of the ninth month the author received the expected message, with an urgent request to hasten, as very strong labour had come on. When he arrived the patient was standing at the foot of the bed, grasping the bedpost, and evidently suffering from pain, although not of a violent character. There was an interval of about ten minutes in the pains, during which she walked about the room, having a very anxious and haggard look.

After a good deal of persuasion she consented to an examination *per vaginam*, which seemed to cause excessive pain, as she screamed violently, and exclaimed that she was being murdered. At the time, the author thought the patient hysterical, but was much surprised at the narrow constricted condition of the vagina, and the presence of the hymen nearly perfect; the agony, however, produced by the examination, seemed so intolerable, that the patient, by a sudden and violent effort, threw herself from him, declaring that he should torment her no more.

Finding that the pains were weak and ineffectual, and at longer intervals, and feeling assured, from the condition of the parts, that immediate labour was not at hand, the author gave twenty minims of opium, and left, directing a full dose of castor oil to be given in a few hours. During the night she slept well; the oil acted freely in the morning; and the next day passed over without pain or any inconvenience, the patient having a good appetite, and being better in spirits. About eleven o'clock at night the pains returned with increased violence, and he found her straining and bearing down at the bedpost. An old experienced nurse declared "that the pains were quite strong enough, with *assistance*, to bring the child into the world." The mother states, that during the night she had placed her hand on her daughter's stomach, and felt the child move vigorously.

In the intervals of pain the patient walked about the room, and was cheerful, except expressing what seemed to be an unreasonable horror at any examination. The pains commenced in the abdomen, and then extended round to the loins, came on regularly every ten or fifteen minutes, and were marked with all the characteristics of labour in its first stage.

The extreme excitement and dread which the patient evinced when the necessity for an examination was impressed upon her induced the author to waive it, although he was anxious to ascertain the real condition of affairs. It would be useless to detail the diurnal symptoms; suffice it that a week passed over, and matters remained apparently without alteration either one way or the other. I may here state that menstruation did not take place at this period. Doubts now first began to arise in the author's mind about the nature of the case; and, when nine calendar months from the departure of her cousin had expired he became very anxious about it. It was at this stage that Dr. Lever was consulted. After a careful and thorough external and internal examination, this gentleman, justly famous for his skill and tact in diagnosis, having the history of the case before him, came to the conclusion that it was "extra-uterine impregnation." At that time her physical condition was as follows:—Countenance pale, an anxious expression; eyes rather sunken; nose pinched; breasts somewhat flaccid; abdomen the size

of mature pregnancy, if not larger; pulse never less than 100; the tongue clean, but morbidly red; bowels sometimes costive for a day or two, at other times the reverse; urine most frequently pale and copious, but on some occasions thick, scanty, and high-coloured. Over the entire abdominal region a distinct pulsation could be heard and felt; but owing to the extreme excitability of the patient it was almost impossible to ascertain whether or not it was synchronous with the pulse. Palliative measures were adopted, and the case, now become one of painful interest, was closely watched. During the next fortnight no perceptible alteration occurred, except that the pulsation in the tumour became less distinct, and the abdomen more tense. Dr. Ferguson now visited the patient, and pronounced the abdominal pulsation to be synchronous with the heart's action, and doubted whether impregnation had taken place at all. On his recommendation the author punctured the abdomen with a fine "trochar," and drew off about five pints of thick grumous and offensive matter. Great relief followed the operation, only, however, temporary; for in the course of a short time the abdomen became as tense as before, and all the patient's sufferings returned. The interest, in a further detail of the symptoms of this case, here ceases, no doubt now being entertained of its character. After a second and a third tapping, the poor girl gradually got weaker and weaker, her only comfort the oblivion produced by anodynes; and on the 15th of February she died.

The day following, assisted by Mr. Druitt, a post-mortem examination was made. The upper portion of the body was extremely emaciated, but, owing to slight œdema of the lower extremities, this appearance was not general. Abdomen greatly distended, and marked by enlarged veins; it measured in circumference fifty-eight inches. About a gallon of fluid was drawn off by the trochar, previous to making a free incision, after which nearly a pailful of brain-like matter rolled out. This had been contained in a cyst, which extended from the pubis to the ensiform cartilage, and from the left to the right hypochondrium; in some parts the walls of the sac were more than an inch thick, and of a fibro-cartilaginous consistence; the anterior portion adhered firmly to the abdominal parietes, the upper being formed by the inferior surface of the liver; that organ was bathed with the contents of the sac, and became inoculated, several small cysts, filled with medullary sarcoma, having formed in its substance. There were, also, many isolated cysts, varying from the size of a hazel nut to that of a pigeon's egg, formed in the walls of the cyst; these had no connection with each other, or communication with the general cavity. The uterus was found imbedded in the lower portion or base of the cyst; no trace of the ovaries could be met with; the bladder was small, but not affected by disease.

The peculiar interest of this case arises from the close resemblance to the symptoms of impregnation; the development of a malignant disease seeming, in a great measure, to be influenced by the feelings or instinct of the patient. The author asks, would the girl have died had no connection taken place? How far did the mental and physical excitement act upon the origin or the progress of the disease? Or was it completely independent, and its course inevitable?

[It is not improbable that the ovarian excitement, connected with the act of copulation, was the starting-point of the disease.]

ART. 89.—*Cases of Laceration of the Perineum, with their Treatment.* By JOHN METTAUER, M. D., Virginia.

(*Amer. Journ. of the Med. Sciences*, April 1847.)

[This accident, which occasionally occurs as a complication of delivery, when severe, is one of the most lamentable visitations to which the female is subjected. Though it does not materially shorten life, it renders life next to insupportable, and, therefore, the inquiry into the best manner of restoring the lacerated parts is one of as much interest as any which the obstetrical surgeon can expect to meet with. In the following cases we have a good exemplification of the ordinary course of these accidents, as well as well-devised operative proceedings for their relief.]

CASE I. This occurred in a lady 24 years of age, and resulted from the coarse and hurried manipulations of a midwife. An examination revealed a very extensive laceration. The recto-vaginal septum was destroyed to a distance of two



inches and a half, and the margins of the rent were completely cicatrized. No trace of the rectum or the sphincter ani could be recognised, and the power of retaining the fæces was therefore entirely lost.

From the mucous coat of the rectum a massive fungous growth protruded itself into the vagina, and the verge of the anus and labia externa were greatly excoriated. Before any operation was attempted, the patient was confined to a liquid diet, and the large intestines were emptied by gentle purgatives.

In the operation the patient was placed on the back, in the lithotomy position, and the labias were held separate by curved spatulae. The margins of the laceration were now readily exposed, bounded by a cicatrized line. The operator then commenced the denudations, taking care, however, that they did not extend beyond the cicatrized lines, by removing a belt of vaginal mucous membrane ten lines in breadth. The denudation was commenced at the verge of the recto-vaginal orifice. Bleeding was checked by repeated syringings with cold water. This step accomplished, the denuded surfaces were brought together by short needles, much curved, and armed with metallic ligatures, which were inserted deeply beneath the margins of the denuded surfaces, by means of needle forceps constructed for the occasion. By arming the needle first with a flaxen or silken ligature, and connected with the metallic one bent into a loop, no difficulty was experienced in introducing the latter. They were inserted from within outward, commencing at the angle of the laceration; when the parts were drawn into apposition, they were retained by twisting the ends of the ligature.

After carefully cleansing the parts by injecting cold water over them, and investing the whole of the twisted portions of the wires with oiled silk, to protect the mucous membrane of the vagina against them, the patient was placed in bed on her left side, and cold compresses were applied to the parts when they became hot and throbbing. The bowels were suffered to repose by withholding all kinds of solid food. On the third and fifth day the wires were tightened by twisting them from left to right. There was no action of the bowels till the seventh day, and the evacuation occurred without any displacement of the parts. On the twelfth day union had completely taken place, and the wires were cut and removed. There was no deformity, and the woman has since had two children without a recurrence of the accident.

**CASE II.** A lady, æt. 32. The accident occurred during her first labour, fourteen years since, and the laceration had increased during each of five subsequent deliveries, until it had extended the whole length of the recto-vaginal septum, fully five inches, and, as in the preceding case, the mucous lining of the rectum was greatly thickened, and exceedingly irritable.

The same preliminary steps were taken as in the preceding case, and the denudations were practised; but as there was no regular boundary indicated by the cicatrized edges of the laceration, the operator was obliged to assume one. Thirteen leaden sutures were inserted in the manner before described, and on the eighth day were cut away, as the parts appeared perfectly united. The operator, however, had scarcely left the house for two hours when he was summoned again, and with haste. On his arrival he discovered that an alvine discharge, of solid character, had found its way through the centre of the original cleft. An examination was immediately made, which soon enough disclosed the existence of the unwelcome opening. The fissure was about twenty lines in length. Every other part of the original fissure remained perfectly united, and looked quite natural, and firm as seen along the floor of the vagina.

The parts were well cleansed from fæces, and four sutures applied, first carefully removing the uneven margins and the mucous membrane a few lines exterior to them; the operator also formed fresh denudations near and beyond the vagino-rectal orifice, to enable him to remove off those parts, and as far as possible to restore the perineum, fourchette, and anus, which he was enabled to do by confining those denudations in contact with three additional sutures. The ligatures were tightened only once after their insertion. In fourteen days the ligatures were removed, and firm union found to have taken place in every part of the original, as well as of the accidental cleft. The perineum and fourchette were very perfectly restored, but there was a slight defect of the anus, the sphincter muscle seeming not to close the orifice so perfectly as to prevent the escape of very liquid

fecal matters in all cases. This case, nevertheless, was regarded by the lady as most triumphantly successful, as it permitted her once more to occupy the station of a wife and housekeeper, and in a very great degree to mingle freely in general society after her long partial seclusion from it.

The third, fourth, fifth, and sixth cases did not differ in any material points from the two which have been particularly detailed; and their treatment having been almost identical with that pursued in those cases, with the exception of the second, after the accidental reopening of the cleft, by the passage of indurated fæces through it. They were all entirely relieved.

The seventh case was in some respects similar to the second, inasmuch as it occurred partially with the first labour, and was extended somewhat at each succeeding parturition, until, finally, its extent was fully two inches and a half. The recto-vaginal wall was entirely destroyed, and complete incontinence was entailed on the sphincter ani muscle. This case had existed in all about twelve years, during which time the lady's health suffered much, and the irregularities were such as distinguished the two cases already detailed.

The operation was performed as already described and seemed likely to succeed perfectly. The sutures were removed on the twelfth day after their insertion, and every part of the line of the fissure had healed, except a very small orifice just within the sphincter muscle, through which flatus and liquid fæces occasionally escaped. The lady would not be induced to submit to an operation for closing this small opening. Some weeks after leaving her, Dr. Mettauer was again requested to visit her in haste. He found on his arrival that the rectum and vagina were again united by a fissure, extending from this orifice through the wall, and was informed by the lady that it was caused by the passage of a large indurated mass of fæces, causing very intense suffering. The laceration, however, has contracted sufficiently to restore the retaining power partially, and thus enables the lady to appear in company, when her bowels are not in a disordered state. This lady has frequently determined to have the operation repeated; but as yet it has not been done. In its present condition the case could be easily relieved.

[In conclusion, Dr. Mettauer states his belief that all cases of this afflicting accident are remediable, and expresses his preference of the metallic over silk sutures.]

ART. 90.—*Galvanism in Atony of the Uterus during Labour*.—[The following instructive case is related by Dr. Golding Bird, in his "Lectures on Electricity and Galvanism." The case occurred in the practice of Mr. Cleveland, whose words we extract.

I was requested to see Mrs. C., æt. 35, in her sixteenth confinement. On my arrival I learned that her previous labours had been tolerably good, with two or three exceptions, when they had been considerably protracted from want of pains. On the Sunday prior to my visit she had been attacked with the premonitory signs of labour, soon succeeded by regular and frequent pains, which on the following morning abated, but never entirely abated until the Wednesday night when the liquor amnii was discharged.

At 1 A. M., on Friday, the pains returned with considerable vigour, but did not last above an hour, and at 6 A. M. they were again renewed for a short period. The surgeon in attendance had exhibited ergot and some spirit and water, but these measures were followed only by a few ineffectual pains.

Having ascertained by examination *per vaginam* that there was no obstacle to the termination of the case, but a want of contraction of the uterus, and believing it desirable, as symptoms of exhaustion were manifest, that no time should be lost, I was soon provided with an efficient electro-galvanic apparatus, and resolved on a trial of electricity.

I was soon gratified in finding, after a few applications externally across the anterior surface of the uterus, that a very decided effect was produced. Regular, strong, and frequent pains came on, and, in the course of a quarter of an hour, a living child and placenta were expelled with less hemorrhage than I ever witnessed. The uterus immediately contracted firmly.

*Medical Gazette, June 11, 1847.*

ART. 91.—*On Funis Presentations.* By JAMES STEPHENS, Esq.

(Lancet, Aug. 21, 1847.)

The author remarks, that the fatal result, as regards the life of the child, so frequently observed when the cord descends during labour, renders it very desirable to attempt some different modes of treatment than those at present adopted by practitioners, and thus endeavour to lessen the excessive mortality shown in the records of the profession.

Dr. Churchill, in his excellent Manual, has collected the number of 355 cases, in 220 of which the child was lost, "being a larger mortality than we find in any other order of practical labour." From the same sources he proves that the cord is prolapsed in about every 245 labours; if, then, we take into consideration the numbers occurring on the face of the earth, what an immense amount of human life is lost annually.

All the plans hitherto proposed to return the cord into the uterus are admitted to be imperfect and unsafe, and for the most part unsuccessful. In the whole of the processes recommended, the vessels of the cord are more or less subjected to compression or strangulation.

Dr. Robert Lee, in his valuable Lectures, published in 1844, at page 352, makes the following observation: "I regret being obliged unreservedly to acknowledge, that no generally successful plan of treatment has yet been discovered for prolapsus of the cord."

And again, a few lines below, he says, "If he could by any means contrive to effect a reduction of the portion of prolapsed cord, or push it back again into the uterus, above the head, and retain it there till the head had passed through the os uteri, or completely distended it, or if we could by any means hasten the delivery, the danger to which the child is exposed would evidently be averted."

The operation of turning and delivery by the feet can only be performed successfully under the most favourable circumstances, as when the os uteri is dilated or very dilatable; the liquor amnii only recently discharged; before the head has entered the pelvis; the soft parts must also be favourable, or the child will die before the delivery can be effected. It is endangered from the increased pressure produced in the very act of turning and forcible delivery.

The extraction of the child by the forceps can only be resorted to in a more advanced stage of the labour: it undoubtedly is good practice when the head of the child occupies the cavity of the pelvis before the arrival of the surgeon: but to be successful and safe, the perineum must be yielding, a state we rarely observe in first labours; the delivery must be effected very quickly, or the child will perish. In those few cases where the natural powers may be trusted, the pelvis must be roomy or the child small, the pains following each other rapidly, or be very long between, to allow the child to revive after each uterine paroxysm; but it is proved that in the majority of instances the child is stillborn.

The author has contrived an instrument for the purpose of carrying the cord back into the uterus, which consists of a small forceps fixed to a strong wire passing through a gum-elastic tube fourteen inches in length, about the size of a common No. 8 male catheter; the apex is tipped with a small metallic ring to prevent it splitting. When the wire is drawn down, the blades of the forceps close by being compressed in the aperture of the ring at the apex of the tube, and it is satisfactory to see how firmly it takes hold of anything to which it is applied. The lower end of the wire is screw-like, and has a small metallic nut placed upon it, which can be screwed up to the ivory handle, by which means the grasp of the forceps is firmly maintained.

It is important to attend to this, because the slightest movement of the stilet might raise the forceps, allow the blades to separate, and release the cord. The tube is slightly curved at the upper end, to facilitate its being passed round the head of the child. Its flexibility will admit of any variation of curve which may be deemed necessary.

The grasp of the forceps can be released in a moment by unscrewing the nut of the wire a little, and passing it upwards, when the blades immediately separate.



The small size of the instrument renders its introduction easy, and it can be easily withdrawn, after having carried the cord into the uterus.

The important principle of the instrument consists in only taking hold of a small portion of the coverings of the cord, leaving the vessels untouched; indeed, the blades never separate wide enough to admit the whole substance of the funis—an accident which would certainly destroy the child.

The instrument is so simple and harmless, that no danger can result from its use; and from the small size there is little fear of the cord following during the withdrawal, which might occur if a larger one was employed, as frequently happens when the fingers are used. It can be applied at any time after the descent of the cord, whatever may be the state of the os uteri, and thus will be successful in those cases where turning or the forceps is totally out of the question; for it would be extremely hazardous to forcibly dilate an unyielding os uteri, or to make violent efforts to turn when the liquor amnii has been long evacuated, and the uterus is strongly contracted upon the body of the child. The probability is the child would be lost, and the operation certainly exposes the mother to the danger of laceration, inflammation, &c. If the cord is examined when prolapsed, it will be found very tense, especially during the uterine contraction; the external circumference is rounded and firm, from the congested state of the umbilical vein, nor could it be easily seized by the instrument at that part; but on the inner circle of the loop the coverings are flaccid, and can be readily taken hold of by the minute blades of the forceps.

[As some difficulty may be experienced in fixing the instrument while the cord is in the vagina, the author recommends that the loop be drawn out, and the instrument applied during the absence of a pain. He states that a portion of the coverings only is to be seized, and that the vessels of the cord, for obvious reasons, are not to be included in the grasp. The cord is then to be carried through the os uteri, round the head of the child. If a pain should come on, the operator should wait till it has ceased. Once reduced, the cord should be held back during the next pain, when it is probable that the presenting part will have advanced sufficiently to preserve the cord descending again. The forceps may then be detached by pushing up the stilet. The above proceeding will, we think, be found more easy on paper than in practice, but it is nevertheless worthy of the attention of accoucheurs.]

ART. 92.—*Influence of Periods of the Day on Births.*—Dr. Casper has ascertained—

1st. That the greatest number of births occur between nine o'clock in the evening and six in the morning; while the smallest number occur between nine in the morning and six in the evening.

2d. The pains of labour commence most frequently between twelve at night and three in the morning, but frequently between six and nine in the morning.

3d. The influence of night is more marked with respect to the commencement of labour than with respect to complete delivery.

4th. Among those births in which the pains commenced by day, the greater number were male children, and vice versa.

5th. On an average the delivery was more protracted when the pains commenced by day than by night.

6th. The preponderance of nocturnal over diurnal births is more striking in respect to children born dead than to those born alive.

*Brit. and For. Med. Rev., July 1847.*

ART. 93.—*On Inversion of the Uterus.*

By JOHN GREEN CROSSE, Esq., Senior Surgeon to the Norfolk and Norwich Hospital.

(Continued from Vol. V. p. 154.)

[We purpose in the present article to give an abstract of what the author justly considers the most important point connected with the subject, viz. the diagnosis.

*Diagnosis of recent inversion of the womb.*—The author remarks that the short and dogmatic rules laid down by writers would lead to the supposition that the diagnosis of the inverted womb is very easy; but that actual experience proves the con-

trary, even in reference to inversion post-partem, which has been mistaken for the head of another child—for another placenta—for a mole, excrescence, or polypus, and even for still more unlikely diseases or displacements. These mistakes have been made not only by midwives, but by well-educated and practised surgeons.

In the slightest degree of recent inversion there would be nothing more than hemorrhage to indicate what has happened, until by examination above the pubes, a cup-like depression of the fundus is detected. No further fact-evidence than this can be obtained until the fetus be delivered, or even then, if the placenta be still partially within the uterus. As soon as the placenta is away, if *depressio* be suspected [and, according to the author, such suspicion is warrantable whenever copious hemorrhage continues], the hand should be introduced into the uterine cavity, when a prominence resembling a piece of sponge, convex, and more or less yielding, will be felt. This, with the cup-like depression detected externally above the pubis, is characteristic of simple *depressio*.

In *introversio*, examination when the placenta is away discovers the lower half of the uterus filled with a convex tumour formed by the inverted upper half of the organ. If the uterus do not grasp the inverted portion, the hand may be passed between the two, and the tumour will be perceived to have a large base. It is symmetrical, with a surface identical with the rest of the lining membrane of the uterus. It is elastic, yielding to pressure, and recovering itself: it is more or less painful to the touch: it is equal in size to the fist, and feels jagged, and as if covered with coagulated blood. Whenever, after delivery, these facts are ascertained, conjointly with a depression or hollow above the pubis, *introversio* is present.

In *perversio*, the inverted portion occupies the vagina, and the finger may be made to encircle it; and the depth of the inverted portion can be ascertained by the uterine sound, and is the same all round. When, in this last degree, the inversion may so fill the vagina, and the cervix be so high that it cannot be reached with the finger, a judgment must then be formed by external examination above the pubis, where the absence of the uterus will give satisfactory evidence. It cannot, however, observes the author, be too strongly pointed out that the uterus, when inverted to this degree, may rise so far above the pubes, and present so large and firm a tumour as to lead to the conviction that the contracted uterus has been felt *in situ*. Several undoubted instances of such an oversight are on record. The tumour in the vagina in *perversio* may be suspected, and will be found to be of a florid colour, with a vascular velvety surface, which bleeds on the slightest touch. If the part presenting be that to which the placenta was attached, it will be uneven, of a dark hue, with placental shreds or coagula adhering to it.

When the inversion is total, although not prolapsed, the diagnosis is not difficult. The tumour fills the vagina, and terminates in a cul-de-sac around the neck or highest part of the tumour, without any lip or aperture. The uterus under these circumstances occurring immediately after delivery, and still retained within the vulva, rises above the pubes, and allows the circle formed by the contracted cervix to be felt externally. Sometimes the contraction of the cervix is so great as to cause the surgeon to imagine that the tumour is the uterus *in situ*, but the constitutional symptoms will, in the author's opinion, sufficiently indicate the true state of the case.

When prolapsed externally (after labour) the inverted uterus can never be mistaken but from inattention, and, says the author, it is well it is so, as the minute rules of investigation are inapplicable, for the patient may be lost while the surgeon is studying to apply them. He must be satisfied with finding the uterus absent from the abdomen, while a tumour is depending from the vagina, and the patient exhibiting the condition of "shock," pulseless and prostrated. When the vagina is also inverted, the author deems a mistake by a surgeon impossible.

[This concludes what the author has to say of the general diagnosis of inverted uterus, and he now proceeds to lay down rules for the differential diagnosis between this accident and other conditions for which it may be mistaken. He puts aside the mistakes for fetal head, or breech, nates, &c., as unlikely, and proceeds at once to the question of diagnosis of inverted uterus and polypus. The author, in limine, remarks upon the fact that polypi may precede pregnancy and

complicate delivery, but does not consider the occurrence as more frequent than that of inversion, wherefore he does not admit the excuse which might be urged under the instance of an error, that the mind of the accoucheur was occupied with the idea of polypus. Certainly, if what the author states is true, it ought not to be. However—]

Polypus is not attended by collapse, which so generally attends inversion. Polypus does not diminish under pressure; an inverted uterus pressed upon disappears, and the patient is relieved. A vesicular polypus having a narrow neck, cannot readily be mistaken. The fibrous polypus, although it has a broad base, differs in being nodulated and inelastic. The uterine sound, in polypus, will pass several inches within the uterine cavity in certain directions, being impeded only on the side to which the growth is attached. In inversion it is impeded at the same and a less depth all around.

*Chronic inversion, diagnosis of.*—Although recent inversion post-partem has been so often misunderstood, arising, the author thinks, from the necessity of rapid decision, it is in the chronic state that the difficulty of recognizing the real nature of the affection becomes the most palpable.

The minor degrees of inversion are rarely met with in the chronic state; the author's remarks are, therefore, confined to *perversio* and total inversion. The latter is the least common. It presents a pyramidal tumour scarcely equaling in size the healthy uterus, the neck presenting an indurated ring just at the point at which the vagina is reflected. The absence of any aperture, fold, or irregularity, distinguishes total inversion from partial, as well as from polypus. The only possibility of error under these circumstances, arises from a very rare complication, referred to by the author, in which a polypous tumour, originating in the os uteri, obliterates that orifice, and causes in its descent more or less complete atrophy of the uterus, itself assuming the shape of the inverted organ. An instance of this obscurity is referred to by the author, and illustrated by engravings.

By its more frequent occurrence, chronic uterine inversion in the form of *perversio extrema*, claims the longest notice. In forming the diagnosis of this form of the accident, the author states that the historical evidence should be, in the first place, carefully made out. Ocular information by the speculum should also be obtained, but the greatest variety of information is to be formed by the *touch*. The smooth velvety covering, and the uniform outline of the tumour, are recognized by the finger, as well as its size; and it is to be recollected, that in cases where there has been no diseased action set up, the inverted organ may scarcely equal the healthy uterus in size, and is flattened anteriorly and posteriorly. The largest part of the tumour is the lowest. Sometimes the finger may pass through the uninverted cervix, and in all cases the elastic bougie may be used and formed to pass an equal depth (seldom more than half an inch) all round. Examination per anum discovers the absence of the uterus from its usual situation. This fact may be also further confirmed by passing a male catheter into the bladder, and directing its extremity backwards, so that it is felt by the finger in the rectum, or by pressing it downwards and backwards, as suggested by M. Malgaigne, so that carrying the coats of the bladder before it, it may enter the peritoneal cul-de-sac formed by the inversion, and become evident to the finger in the vagina. Such evidence, observes the author, would be decisive, but, as far as his knowledge goes, no surgeon has pronounced favorably upon the proposal from his own experience.

The remaining portion of this section is occupied with the differential diagnosis of chronic *perversio* and polypus occupying the vagina, which are the two maladies which have been most frequently confounded together, or reciprocally mistaken the one for the other. Some information may be derived from the size of the tumour; chronic inversion presents a tumour not larger than the healthy uterus; one, therefore, of large size, indicates a polypus. Variation in size is also important. The inverted uterus varies little in size, and never exhibits such an increase as is seen in polypus. If, therefore, growth be ascertained, it is polypus.

As to sensibility of the tumour, it may be stated generally that an inversion is more or less sensitive, and a polypus not so; though the latter may be sensible of the fibrous character, and enveloped in a layer of uterine tissue. The inverted uterus when chronic is always hard and dense in structure; but polypi may vary



much in texture, some being soft and light, as the vesicular form, others heavy, hard, and nodulated.

Ocular evidence of oozing of the menstrual fluid from the surface of the tumour may be considered as pathognomonic.

Inversion of the womb produced and accompanied by polypus, cannot happen as long as the polypus remains wholly in utero, but if the os uteri be dilated, and the polypus partly or chiefly propelled into the vagina, *depressio* or *introversio* may be the result. In this case, in addition to the signs afforded by examination per rectum and over the pubes, if the finger can be passed into the uterus above the polypus, the union of this body with the inverted fundus will be perceived, giving the sensation of two cones united, as in the hour-glass shape. The insensibility of the polypus up to a certain point, and the commencing sensibility of the superior cone, will also materially assist in the diagnosis.

[We shall continue this Essay as soon as the remainder is published.]

*Trans. Prov. Med. and Surg. Association, Vol. iii. New Series.*

ART. 94.—*Inversion of the Uterus successfully treated.* By E. H. M'COY, M. D., of Harrisville, Ohio. (Western Journ. of Med. and Surg., Jan. 1847.)—The subject of this case was 21 years of age, and had been delivered by a midwife. When seen, two days afterwards, by Dr. M'Coy, her respiration was diaphragmatic; skin hot and dry; pulse, small, wiry, incompressible, and beating 115 in the minute: mouth dry; tongue covered with a dark-brown fur. She had extreme abdominal tenderness, the lochia was suppressed, and she experienced continued bearing-down pains. On examination per vaginam, he found the uterus inverted, and the vagina reflected in the form of a ring around the pedicle of the tumour. He introduced his hand in a conical form, indented the apex of the tumour, and gradually but perseveringly carried it up through the os uteri, entirely relieving the expulsive after-pains. He ordered an infusion of chamomile flowers to be thrown into the vagina every two hours, together with fomentations of hops to the abdomen, and a powder containing v grs. pulv. antimonialis, ij grs. calomel, and  $\frac{1}{2}$  gr. opium; one to be taken every two hours. On his second visit, eighteen hours after reducing the inverted womb, he found a decided improvement in all the symptoms; the powders had acted freely on the bowels, bringing away copious, dark, bilious dejections; the abdominal tenderness was subsiding; the lochia had returned; the pulse had fallen to ninety, and was soft and full; the skin was relaxed and moist, and the secretion of milk was established. The patient speedily recovered.

*Amer. Journ. of the Med. Sciences, July 1847.*

## SECT. II.—DISEASES OF CHILDREN.

ART. 95.—*On Simple Acute Inflammation of the Brain in Infants.*

By M. RILLIET.

(*Archives Générales de Méd.*, 1847.)

[The author's object, in the following important Essay, is to point out the nature, symptoms, and treatment of acute inflammation of the brain as distinguished from the tubercular form of the complaint, which is the more common disease known as acute hydrocephalus. Our space will not allow of our giving the historical notices of the disease which the author has minutely detailed: for these the reader is referred to the original, or to the "Provincial Medical and Surgical Journal" of the present year (p. 151), where our translation of the Essay is to be found. The characteristic morbid appearances of the disease in question are always to be found in the convexity of the brain, or in the ventricles which are inflamed and infiltrated; and it is rare to find tubercles either in the brain or other organs. In the tuberculous form, on the other hand, the diseased products are always accumulated at the base of the brain, and tubercles or granulations are always present either in the pia mater or in other organs of the body, or, as is more commonly the case, in both. So constantly is this fact observed, that the author upon it alone

establishes a diagnosis between the two forms, as will be seen in a future part of the Essay. The morbid anatomy of the simple form is thus given:]

**MORBID ANATOMY.**—Great familiarity with pathological anatomy is necessary for the appreciation of the slight lesions which frequently constitute the morbid appearances left by tubercular meningitis; but it is far more easy to recognize the results of true meningitis of the convexity. Scarcely, in fact, is the injected dura mater divided, than a greater or less extent of the convexity of the two hemispheres is seen to be covered with a layer of yellow or yellowish-green exudation. The deposit also extends to the internal aspect of the hemispheres, the upper surface of the cerebellum, and sometimes to the base of the brain. A slight examination is sufficient to demonstrate that the deposit consists of liquid pus, and that its seat is always the pia mater, and sometimes also the arachnoid cavity. The products of inflammation deserve to be separately studied in these two situations.

1st. *In the arachnoid.*—This membrane, although it contains the products of inflammation, may itself not exhibit any trace of that process; but in general retains its smooth and polished appearance. If life has been prolonged to the sixth or seventh day, the pus loses its fluidity, and acquires such consistence as to resemble a false membrane; in other cases true false membranes are formed in addition to the fluid products. These partake of the yellow colour of the pus,—are thin, soft, and seldom very extensive: they are always easily detached from the serous membrane, unless, as is occasionally seen, organization has commenced.

2d. *Pia mater.*—Alterations similar to the above are discovered also in the pia mater, especially in patients who have died on the fourth or fifth day. The pus, when liquid, may be made to pass over the surface of the membrane by pressure with the finger, but it subsequently becomes concrete, forming a flat, broad layer of variable thickness, and which passes down into the sulci. The membrane appears to be puffed up by the secretion, and is increased both in thickness and tenacity. The deposit of pus is always more copious along the sides of the blood-vessels, and in the interstices of the convolutions, than elsewhere. At the base the pia mater is often quite healthy. Over the surface occupied by the pus the membrane is finely injected, and is readily detached from the surface of the brain.

3d. *Cerebral substance.*—The brain is firm, sometimes preternaturally so. The gray substance is of a normal colour if death has occurred before the fifth day; later it may also be nearly unaltered, but it is more generally of a vivid rose colour, and the medullary portion exhibits numerous bloody points. The most superficial layer of the convolutions is sometimes softened, so that portions of it are removed along with the pia mater. In very young infants the brain is sometimes softened throughout, an appearance which is probably due to œdema of its tissues. The condition of the brain in subjects who have speedily succumbed, shows plainly that inflammation of the membranes is the initiatory lesion, and the cerebral pulp becomes involved subsequently.

4th. *Ventricles.*—As a general rule, the ventricles are found empty, or containing only a teaspoonful or two of purulent serosity. The exception to this occurs in very young infants. In some cases the lining membrane and the plexus choroides exhibit traces of inflammation, being injected and softened, or subsequently pale, but thickened and opaque. The central portions of the brain in some cases preserve their consistence; in others they are softened, or converted into a diffuent pulp. The latter case chiefly occurs in young infants, in connection with copious serous effusion into the ventricles; but it is occasionally seen without this, and must then be attributed to inflammatory action, and not to maceration, as may be the case when the effusion is in large quantity.

To recapitulate:—The anatomical characters vary according to,—1st, the duration of the malady; 2d, the age of the patient; 3d, the seat of the inflammation.

1st. In cases which prove fatal before the fifth day, we find the pus fluid or semi-fluid, or false membranes in the arachnoid and pia mater, the latter being vividly injected, but not adherent to the surface of the brain. Later we in general discover only concrete pus or false membranes; the pia mater is less injected, and the surface of the convolutions is sometimes soft and reddened. In some in-

stances, the ventricular portion of the arachnoid is inflamed, and the cavity contains a small quantity of purulent serosity, but never pure serum.

2d. In very young infants the brain is often softened universally; the ventricles contain a large quantity of serosity, and there is also occasionally a subarachnoid serous effusion.

3d. General meningitis is the most common form of the disease; next, meningitis of the convexity; that of the base and ventricles is much more rare.

*Spinal marrow.*—The inflammation sometimes extends from the membranes of the brain to those of the spinal cord. It is to be regretted, however, that in the cases of autopsy which we have at our disposal, the examination of this part has been exceptional. [The author refers the reader for information on this point, to his "*Traité des Maladies des Enfants*," t. i. p. 697.]

*Thoracic and abdominal organs.*—The most important fact which is elicited by the examination of these organs in cases of true meningitis is, that tubercles are never met with, although they are universally present in meningitis of the base. Thus, in seventeen autopsies, they were not once met with. We therefore consider it justifiable to propound the pathological law,—*that general meningitis and meningitis of the convexity attack only non-tuberculous subjects; whilst inflammation of the base, without coincident affection of the membrane of the ventricles, is exclusively a disease of the tuberculous habit.* This law is at least true in the majority of cases; the exceptions are those in which the inflammation arises from external injury; but in spontaneous inflammation the law holds good.

*SYMPTOMS.*—*Headache* is a constant and early symptom in children above the age of two or three years; below that age it is often absent, especially in the secondary forms of the disease. This symptom either sets in simultaneously with the fever and vomiting, or precedes these by a day or two. It is confined to the forehead and is of great intensity, much greater than in either typhoid fever or the tubercular form of the disease; its duration is variable, but seldom goes beyond the third day.

*Intelligence.*—Disturbance of the intelligence is also an early symptom, and is never wanting whether the inflammation be primary or secondary, or at any age. In children of four and five, disorder of the mental faculties precedes the lesions of motility; the reverse is the case with young infants. The mental disturbance is usually first manifested in anxiety and inquietude. The child cannot rest, but changes its position unceasingly. It either refuses to answer questions altogether, or its replies are short and peevish. Subsequently violent delirium ensues. In some cases, chiefly young infants, somnolence or coma precedes the agitation, but most commonly the coma follows the delirium, or alternates with it. As the disease progresses, the torpor predominates.

*Disorders of motility.*—The most common of this group of symptoms are convulsions. In young infants they are frequently the earliest in the series, and are then severe and repeated. In six infants of from four months to two years of age—in three, convulsions were the first symptoms; in two, they appeared at a later period; in one, six days before death. In older children convulsions are seldom observed at the commencement, but are commonly witnessed two or three days before death, or are the immediate precursors of dissolution. They are more commonly partial than general, and are not so uninterrupted in their succession as in younger subjects.

Other disorders of the motor functions replace convulsions when these are absent, or succeed to them when they disappear. Thus, in some cases, rigidity of the limbs is noticed during the first or second day; in others, a more or less perfect hemiplegia occurs. Some of these phenomena, such as rigidity of the trunk, with drawing backward of the head, are probably to be referred to an extension of the inflammation in the membranes of the cord.

*Organs of sense.*—Intolerance of light and noise exists from the commencement. At a more advanced stage, there are strabismus and contracted pupil; still later the pupil is largely dilated and insensible.

*Countenance.*—In the commencement of the disease, the face is alternately flushed and pale; it then bears an expression of haggard anxiety, or of dullness and stupidity. The child appears to fix its gaze for a few moments upon some object, and then relapses into a vacant stare.



*Circulation.*—There is always more or less febrile disturbance: the pulse is quick and the surface hot. Occasionally there is an appearance of remittance in the fever, with concomitant variation in the pulse. In general, a fluctuation in the pulse is a constant symptom. [The author admits that he wants more information on the characters of the pulse in the cerebral diseases of children. He might have found much that he requires in English works on these affections, especially in those of Cheyne and Abercrombie.]

*Respiration.*—The respiration is generally irregular, and sighing. In some cases it is very rapid.

*Digestion.*—It is seldom that vomiting is absent in primary meningitis of children above the age of four years. This symptom generally appears on the first or second day, and is spontaneous and frequent. In some cases it continues without respite till the close of the disease. In younger children, and in some cases of secondary meningitis, vomiting is absent. Constipation is a common symptom, but it is neither so common nor so obstinate as in the tubercular form of the disease. As death approaches the belly becomes retracted.

**GENERAL DESCRIPTION OF THE DISEASE.**—*Form, duration, termination.*—Acute meningitis declares itself under two forms, to one of which we give the name of "convulsive," the other "phrenitic." We do not, however, wish it to be understood either that convulsions are never present excepting in the "convulsive" form, or that the "phrenitic" is the form exclusively characterized by perversions of the intelligence; we merely wish to notify by these terms the predominance of certain symptoms.

The *convulsive form* is most commonly seen in very young infants. It commences suddenly by an attack of convulsions, general or partial, with more or less febrile disturbance. There is neither vomiting nor constipation. When the convulsions, which are repeated at brief intervals, subside, the infant is left either in a state of agitation, or profoundly comatose, with squinting, and sometimes perfect hemiplegia. In certain cases there is an approach to sensibility between the fits, but the amendment is but momentary, and death rapidly approaches, either by coma, or during a subsequent paroxysm. The convulsive form of meningitis sometimes sets in more slowly, and the convulsions are not so closely approximated. The duration of this latter variety is longer, being from a week to a fortnight.

*Phrenitic meningitis* is commonly observed in early childhood, and in many respects resembles the acute meningitis of the adult. It commences with fever preceded by a rigor; violent headache ensues, with photophobia, vomiting, and sometimes constipation. The intellect suffers by the end of the first or second day, and the face assumes the peculiar wild look of the disease. Agitation and stupor alternate, and delirium is generally present. Subsequently there are grinding of the teeth, partial convulsions, rigidity of the limbs, a drawing of the head backwards, strabismus, and contraction followed by dilatation of the pupils. About the seventh or eighth day some of these symptoms subside; the vomiting ceases; but the fever still continues; the pulse and respiration are irregular; the belly is retracted, and finally partial convulsions ensue, followed by coma and death.

*Diagnosis.*—The diseases which are apt to be confounded with acute meningitis, are, as may be imagined, numerous. Before we mention these diseases, we shall enumerate those symptoms of the convulsive and phrenitic forms which are most worthy of confidence in a diagnostic point of view.

In the convulsive form we should attach great importance:—1. To the constant repetition of convulsions at short intervals. 2. To the acceleration of the respiration, which cannot be accounted for by any pulmonary lesion. 3. To the absence of all visceral inflammation, and of any indication of an exanthematic eruption. In the phrenitic form, the cardinal symptoms are—intense headache, accompanied by frequent bilious vomiting and constipation, followed by delirium and agitation, alternating with stupor.

*Differential diagnosis of the convulsive form.*—Convulsions in early infancy are very frequently symptomatic; but in this case they are seldom violent or so frequently repeated. Moreover, in the interval, the little patient recovers his sensibility, the respiration is not permanently accelerated, and the pulse quickly regains

its normal standard. It must, however, be admitted that in many cases the diagnosis can only be established by the progress of the disease.

The distinction between convulsive meningitis, and other cerebral affections, is still more obscure, and indeed it is often impossible. The error is not, however, one of importance, as the treatment, and too often the termination, of all are the same.

The first disease which we shall endeavour to distinguish is *hydrocephalus*, with infiltration of the *pia mater*, the *Wasserschlag* of Gölis.

In certain cases this condition complicates inflammatory meningitis, and the main features of each are then undistinguishable. In other cases the "hydro-meningitis" is the principal lesion, and we find only slight traces of purulent effusion. This disease, like the one from which we wish to distinguish it, also attacks very young infants: it sets in with fever, and a violent attack of convulsions, or with agitation and stupor, with transient and fallacious signs of amelioration. The analogy between the disease and the convulsive form of meningitis is therefore perfect.

In *hemorrhage into the arachnoid*, we observe repeated convulsions as the earliest symptoms, but they are in general less violent than in meningitis, and the coma does not ensue so rapidly. According to M. Legendre, children attacked with meningeal apoplexy, exhibit contractions of the fingers and toes—a symptom which is not observed in meningitis; while, on the other hand, the excitement of the pulse and circulation which is witnessed in the latter disease, is not seen in meningeal apoplexy. *Hemorrhage into the pia mater* also in some respects resembles convulsive meningitis, but it is a lesion of such rare occurrence that it need scarcely enter into our consideration.

These remarks conclude what we have to say respecting the diagnosis of convulsive meningitis from other organic lesions of the brain; but we must remember that the most important part of the diagnosis of the disease consists in its distinction from essential or symptomatic convulsions, since the treatment of the two forms of convulsion is obviously different.

What we have said in connection with "convulsive meningitis," applies equally to the phrenitic form. Cerebral hemorrhage, encephalitis, &c., may be confounded with it without any great damage; but it is not so with regard to cerebral congestion, tubercular meningitis, and those sympathetic affections of the brain which arise during the course of the eruptive or typhoid fevers. The following paragraph deserves the earnest attention of our readers:

*Cerebral congestion.*—We have often propounded to ourselves the following question:—Ought we to consider those violent cerebral attacks, which either quickly prove fatal, or as rapidly subside, and the symptoms of which are precisely those which indicate the onset of acute meningitis, as real instances of that disease? Post-mortem examination in these cases discovers neither pus nor false membranes, but only simple congestion. Is this congestion to be regarded as the initiative stage of inflammation? The question is difficult of solution; but we nevertheless consider that it should be answered in the negative, and for these reasons:—Inflammatory products of the brain form with such rapidity, that its whole surface may be covered with false membranes in a few hours, consequently the cases we have just mentioned ought to be distinguished from meningitis, both anatomically and by their symptoms. The diagnosis may, however, be here plainly established by the following comparative table:

#### *Cerebral Congestion*

Declares itself by sudden stupor, or more complete insensibility, with dilatation of the pupils; or its first symptoms are acute delirium, with difficult respiration, quick small pulse, and slight convulsions. These symptoms appear almost instantaneously. Vomiting is for the most part absent.

#### *Meningitis.*

In the phrenitic form, the first symptom is partial or general headache. Delirium does not appear in general until the lapse of twenty-four or thirty-six hours. Vomiting is generally present.

*Cerebral hemorrhage.*—In some cases cerebral hemorrhage closely simulates acute meningitis. Headache, convulsions, delirium, vomiting, and constipation

mark the onset of both diseases, and it is, therefore, difficult to decide, with certainty, which disease is present. The best guide to a correct conclusion is the high febrile excitement which characterizes meningeal inflammation.

*Tubercular meningitis.*—We now arrive at the most important portion of this essay, and shall endeavour to point out the main distinction between simple and tubercular meningitis. For clearness' sake we would remind the reader of four circumstances:—1. That the diagnosis is to be drawn from the ensemble of symptoms, and not from the individual characters of a disease. 2. The main element in forming our diagnosis is the consideration of the point of time at which the disturbances of the intellect and motility originate. 3. That the invasion of tubercular meningitis may take place under three different states of the system,—1st, after a longer or shorter duration of precursory symptoms; 2d, during the progress of tubercular disease in other organs; 3d, in perfect health. 4. That the first and third species are readily distinguished from acute simple meningitis; the error is more likely to be made between the latter and the second form. These preliminaries established, we shall proceed to lay down a brief summary of the differential symptoms as below:

#### *Simple Meningitis.*

1. The children attacked are, in general, vigorous and well developed, and do not exhibit any signs of tubercle. Their relations, too, are healthy.

2. The disease may appear as an epidemic.

3. *Prior condition.*—The attack takes place during robust health, or, if it is secondary, it follows some palpable external cause, or arises in the course of a non-tubercular malady.

4. *Mode of attack.*—Violent convulsions, intense fever, quick respiration if the infant is very young; or headache, fever, bilious vomiting. After a lapse of twenty-four hours, excessive agitation, delirium, and prostration.

5. *Symptoms.*—Headache intense, vomiting incessant, fever high, delirium fierce, constipation moderate.

6. *Progress.*—Rapid; convulsions incessant.

7. *Duration.*—Death in 24 hours, in some cases; but generally at the end of the third day.

#### *Tubercular Meningitis.*

1. The subjects of tubercular meningitis are delicate, and often precocious children. They are subject to glandular enlargements, and chronic eruptions of the skin. Their blood-relatives generally bear the stamp of the strumous diathesis.

2. The disease is always sporadic.

3. *Prior condition.*—The infant is observed to pine away and lose its flesh and strength. The disposition is altered, the appetite fails, and the *primæ viæ* become deranged.

4. *Mode of attack.*—Convulsions never the first symptoms; the transition from the first to the second period of the disease insensible; the coming on of the second stage marked by headache, vomiting and constipation; the intelligence sometimes unaffected. When the precursory symptoms are absent, the disease is ushered in by vomiting, moderate headache, and fever.

5. *Symptoms.*—Headache not intense, vomiting not so urgent, constipation obstinate, fever moderate.

6. *Progress.*—Slow.

7. *Duration.*—More prolonged—a fortnight to three weeks.

[Having thus gone through the list of cerebral affections for which the disease in question may be mistaken, the author next draws the distinction between it and some of the eruptive fevers, as small-pox, scarlatina, &c.]

*TERMINATION—PROGNOSIS.*—Acute meningitis in infants may have the following terminations: 1. In death. 2. In recovery. 3. In the transition to a chronic condition.

Of these the first is unfortunately by far the most frequent. Some authors consider that this form of the disease is less fatal than the tubercular form, but we know of no good authority for the assertion. If, indeed, the absence of the tuberculous element in this form of the disease, and its occurrence in a previously



healthy constitution, might reasonably give us some hope of combating its progress with success, there are, on the other hand, to be taken into account, the violence of the inflammatory condition, and the rapidity with which cerebral disorganization is induced.

That there is, however, some ground for hope in the sporadic form of the disease is fairly to be anticipated, since even when the disease is epidemic, some recoveries occasionally take place. In looking over the works on meningitis by Gölis, Charpentier, and others, we do sometimes meet with instances in which real meningitis has been cured, although we regard the generality of the cases reported as cured to have been instances of erroneous diagnosis. [In this remark we perfectly agree with the author: it has happened to us not seldom to have met with vaunted cases of hydrocephalus cured, which have in reality been nothing more than infantile remittent, with cerebral complication.—Ed.]

It is no easy matter, if not quite impossible, to give anything like a scientific prognosis in this disease. Facts are wanting, and the disease must be re-observed. Independently of the termination in death and in recovery, some authors consider that the inflammation may pass into a chronic state. We acknowledge that this may possibly be the case, but we do not know of a well-authenticated instance. In our experience, whenever there has existed a chronic or sub-acute inflammation of the membranes of the brain, it has been so from the commencement, and has been in the instance of a tuberculous subject—a case, in fact, of tubercular meningitis, and not of simple inflammation. In those cases in which the appearance of false membranes has led some authors to believe in the existence of chronic simple meningitis, we, as we have elsewhere stated (*Traité des Maladies des Enfants*), consider the lesions to be the result of former meningeal hemorrhage.

**CAUSES.**—The causes of meningitis are not otherwise than obscure, as might indeed be expected, when we consider the comparative rarity of the affection, and the imperfection in the history of infantile cerebral affections in general. Most authors agree in the great preponderance of the tubercular form of the disease over that which we have denominated the simple acute form; but they differ respecting the age at which this latter most commonly makes its attacks. Guersent, for example, states that in early infancy it is more common than the tubercular form. Bouchut affirms the direct contrary. In analyzing a certain number of cases during the composition of this Essay, we have ascertained that simple acute meningitis may attack children of all ages; but that it is especially frequent in the first and ninth years. This is shown in the subjoined table:

	Cases.	Primary.	Secondary.
1st year . . . . .	5	5	0
2d to 5th . . . . .	4	2	2
6th to 10th . . . . .	13	11	2
10th to 15th . . . . .	3	1	2
	<hr/> 25	<hr/> 19	<hr/> 6

It would appear from this table that dentition has an intimate etiological connection with the disease, as it is most frequent at the periods of eruption of the first and second dental series.

Robust children are those most commonly the subjects of this disease, at least as far as our observation goes; and boys appear to be more prone to it than girls. According, however, to the experience of others, the influence of sex is not perceptible.

Meningitis may occur in all seasons, but a larger series of observations is necessary in order to determine whether it is more frequent at certain times of the year than at others. The distribution of the cases which forms the basis of this memoir was as follows:

January . . . . .	1	July . . . . .	0
February . . . . .	2	August . . . . .	2
March . . . . .	1	September . . . . .	2
April . . . . .	1	October . . . . .	4
May . . . . .	4	November . . . . .	1
June . . . . .	2	December . . . . .	3

It does not appear, therefore, that the disease is especially prevalent in hot weather, though it is incontestably occasionally produced by insolation. M. Guersent alludes particularly to this cause:—"The prolonged exposure to the sun's rays is," he observes, "one of the most common causes of acute meningitis, especially in very young children. I have many times had proof of this, and particularly in one instance, in which an infant which had been left exposed to the mid-day sun in the garden died of most extensive meningitis of the surface of the brain and cerebellum." (*Dict. de Méd.*) Dr. Whitehead also attaches great importance to the influence of insolation. According to him it is the most potent of all the causes of the disease. (*Medical Gazette*, Jan. 1844.)

Among the occasional causes of acute meningitis is the repercussion of eruptions of the scalp; among the cases which we have met with the majority were either the subjects, or had recently been cured, of eczema, favus, or impetigo.

Direct causes, such as blows, &c., may induce meningitis in infants, as in persons of greater age. Parent gives the case of a child of ten years of age who died of meningitis, the consequence of fracture of the orbital plate of the frontal bone; such instances are, however, rare.

**TREATMENT.**—What we have said respecting the causes of acute meningitis applies still more forcibly to its treatment. We are not able, in the present state of science, to point out the most successful means of arresting the progress of the disease. The treatment is *prophylactic* and *curative*.

**1st. Prophylactic treatment.**—The hygienic rules which we have elsewhere insisted upon, in reference to tubercular meningitis, are only partially applicable to the disease in question. Instead of the tonic medicines, so applicable in the tuberculous constitution, it is necessary, in the probable subjects of this disease, to advise a cooling and slightly antiphlogistic regimen. The bowels should be kept free, and care should be taken to maintain an equable temperature in the extremities; the hair should also be kept short and thin, so that the head may be cool; and, lastly, tepid baths should be frequently administered.

As we have no intention to write an article on hygiene, we shall content ourselves with these general rules; but while upon the subject, we think it right to allude to the precautions which are necessary in treating the chronic scalp-eruptions of children.

When the cutaneous inflammation occupies but a limited surface, it may in general be cured without risk; but, on the contrary, when the diseased surface is extensive, the rapid denudation of the inflamed skin, by a removal of the scabs, may be followed by the worst consequences. Whatever be the explanation of this, the fact remains certain. Common sense, then, indicates that in order to avoid danger these scalp-eruptions must be treated with caution, and as the injurious effects seem to be proportionate to the extent of the denuded surface, it is advisable to treat but a small portion at a time, and to encourage free action of the bowels as a derivative.

**2d. Curative treatment.**—Acute meningitis, as the most formidable inflammatory affection to which infancy is subject, requires an energetic treatment. The indications to be fulfilled are both general and special. Among the former we may mention—1st, active antiphlogistic treatment; 2d, to favour the absorption of effused products; 3d, to replace the antiphlogistic treatment by one vigorously derivative, during the period of collapse; 4th, to guard against all nervous excitement.

The special indications have reference to the exciting cause of the disease, and thus the treatment must vary accordingly as it succeeds to the rapid declension of a cutaneous affection, or assumes the convulsive or phrenitic form, or appears sporadically or epidemically:

**1st Blood-letting.**—Authors are not agreed as to the propriety of abstracting blood in tubercular meningitis, but in the acute form there can be no question of its advantages. In young infants leeches are to be preferred to general bleeding; but in children of the age of four years, bleeding at the arm is the best. When leeches are determined upon, they are to be applied in numbers proportionate to the age of the child, either to the head or to the extremities, as the circumstances of the case may appear to require.

**2d. Cold applications, blisters, &c.**—Heim was one of the first physicians who employed cold affusion in meningitis, and appears to have placed such confidence

in this measure as to be indifferent to the employment of others. The plan was to pour cold water upon the head for ten minutes in every hour.

[The author here enters into a long account of the different modes of applying cold, but as they are in common use, we need not occupy our pages with their description. The author him-self gives the preference to a mode of irrigation, which consists in conducting water *guttatim* by means of a skein of thread, which is made to hang from a vessel of water over the head.]

Cold applications are only useful in the early stages of the disease; all authors, without exception, condemn them as hurtful when coma supervenes. Some writers then recommend the substitution of warm applications, and Romberg more especially approves of them; Gnersent also speaks favourably of their use when there is little heat of head. We have no personal experience of this matter, but should question their advantage. A measure in which we have more confidence is the application of warm stimulating fomentations to the extremities.

The employment of blisters must next occupy our attention: writers differ somewhat as to the period most suitable for their use. Charpentier advises them from the beginning, and applies blisters to the legs within some hours of the commencement of the treatment; if no amelioration follows these, he then applies others to the thighs or abdomen, and again later, to the nape of the neck.

There is one case in which we must not omit to induce vigorous counter-irritation of the scalp, namely, in those instances in which the disease has supervened upon the retrocession of a cutaneous eruption. In these cases blisters to the scalp or frictions with croton oil are strongly indicated; we give the preference to the latter, and could relate cases in which it has been followed by the best effects.

*Purgatives.*—We have no great faith in this class of medicines, but, on the contrary, have seen reason to believe that by exciting intestinal irritation, they diminish the chances of recovery, without in any measure removing the original disease; nevertheless, it must be stated that Abercrombie, Deloyen, and others regard purgatives as a valuable addition to the treatment of meningeal inflammation.

*Alteratives.*—The rapid progress of acute meningitis—the early formation of morbid effusions—the predominance of fibrin in the blood—all indicate the employment of those medicines which promptly and effectually modify the crisis of the blood, and at the same time encourage the absorption of the effused products.

Mercury, in whatever form it is employed, should not be exhibited until after blood-letting, local or general. Some difference of opinion exists as to the dose which is most suitable. Gölis prefers small doses, as the fraction of a grain; others, and more particularly the British practitioners, give it more liberally. Mercurial frictions are to be preferred to the internal administration of the mineral, as less likely to excite formidable intestinal symptoms.

Of late years the preparations of iodine have been well spoken of, especially in the period of collapse: we have had small experience of their effects in acute meningitis, but have found them quite imperative in the tubercular form of the disease.

Having thus gone through the principal remedies, we shall, in conclusion, lay down the following *resumé* of our practice, in the different forms of the affection:

1st. In the case of a robust infant, seized suddenly, or after a restless night, with violent and repeated convulsions, the child being comatose during the intervals, with squinting, contracted pupils, quick pulse and respiration, if no cause can be assigned for the attack, we adopt the following line of treatment.

One or more applications of four leeches to the knee; large cataplasms to the extremities, frequently renewed; cold applications to the head.

If the convulsions persist after the lapse of twenty-four hours, and the coma is not less during the intervals, leeches must be again applied, and irrigation be substituted for the cold lotions. Calomel is to be given internally, and mercurial ointment rubbed into the axillæ and thighs. If the child becomes pale, the pulse falls, and the convulsions are less frequent, the continued application of cold must be suspended. If confirmed coma supervene, blisters may be applied instead of the cataplasms, these being kept on only sufficiently long to redden the skin, and then



moved to another spot. The calomel may now be replaced by the iodide of potassium.

[In the management of the above case there appears to us one great omission, viz., the non-performance of lancing the gums, with the exhibition of enemata. As it is next to impossible in the first instance to diagnose centric from eccentric convulsions, the latter treatment should, in our opinion, always premise the more severe measures above indicated.—Ed.]

2d. In a young child, of one or two years of age, of strong constitution, who is seized with fever, with continual somnolence, and accelerated pulse and breathing, without pulmonary lesion, with a fixed stare, frequent acute cries, repeated vomiting, and constipation; if it has not been exposed to the contagion of fever, and dentition proceeds normally, the practitioner should suspect the onset of acute meningitis, and prescribe leeches and cataplasms, and then wait awhile. If the symptoms persist, he must follow out the treatment above mentioned.

3d. Suppose a child aged seven or nine years, of good constitution, after exposure to the sun, is taken with fever and headache, vomiting repeatedly, and is agitated and complains of the light; if there is no history of typhoid fever, phrenitis should be suspected, and blood be taken from the arm. If the symptoms diminish, but again increase in intensity, it is probable that the disease has an intermittent character, and quinine may be exhibited by the mouth and in an enema. But if to these symptoms delirium or coma be added, and the disease has not passed the second or third day, active treatment must still be persevered in. The bleeding is to be repeated, or leeches to be applied to the mastoid processes, cold applications are to be continually applied, and if there be no vomiting, and the bowels are obstinate, croton oil may be given. If, however, the vomiting be urgent, we should endeavour to allay it by a quarter of a grain of bismuth, given every half hour. In addition to this, mercurial ointment must be energetically rubbed in. This treatment is to be carried out during the second and third day. If, however, the pulse becomes feeble and irregular, the face livid, and the pupil dilates, the hydriodate of potash should be given, and blisters applied.

4th. In the secondary and more insidious form of the disease, it is prudent not to abstract blood. A sedative treatment offers the greatest chances of success.

ART. 96.—*Symptoms of Cerebral Disease in Infancy.* By Dr. WEST.

(*Medical Gazette*, May 21, 1847.)

[The following remarks are extracted from a valuable course of lectures on the Diseases of Children, now in the course of publication in the "*Medical Gazette*."]

The painful sensations which the infant experiences soon show themselves in the haggard, anxious, or oppressed looks, which take the place of the naturally tranquil expression of its countenance. It often puts its hand to its head, or beats or rubs it, or while lying in its cot, bores with the occiput in its pillow, owing to which, in children who have suffered for any time from uneasy sensations in the head, you will often find the hair worn off the occiput. It turns its head away from the light, and lies much with its eyes half closed in a state of apparent drowsiness, from which it often arouses with a start and cries. The cry, especially in inflammatory disease, is peculiar; it is generally a low, almost constant moan, very sad to hear,—interrupted, occasionally, by a sharp, piercing, lamentable cry, almost a shriek. If the child be young, it will often seem relieved by being carried about in its nurse's arms, and while she is moving will cease its wailing for a time, but begin again the moment she stands still. You will sometimes observe, too, that if moved from one person's arms to those of another, or even if its position be but slightly altered, a sudden expression of alarm will pass across its features; the child is dizzy, and afraid of falling.

You see, then, that even in the infant there is a language of signs, by which we learn with certainty the existence of pain in the head, and the connection of this pain with dizziness and intolerance of light. You must beware, however, of concluding from any one set of symptoms that the head is the seat of real disease. The child, as well as the adult, may have sick headache, and the degree of febrile

disturbance, of heat of surface and heat of head, together with the state of the digestive organs, are all to be taken into account in forming your diagnosis.

Something may be learnt of the state of the mental powers, and of the feelings even in early infancy. Have you never watched an infant on its mother's lap, and noticed the look of happy recognition with which its eye meets that of its mother? An early result of cerebral disease is to interrupt this intercourse;—the child now never seems to catch its mother's eye, but lies sad and listless, as if all persons were alike indifferent to it, or at other times even familiar faces cause alarm, the child apparently not recognizing those who yet have always tended it. This disturbance, however, is but momentary, and the child subsides into its former condition, and allows itself to be taken by those at whom a minute before it seemed frightened.

But these symptoms are to be interpreted by the light thrown on them from other sources, and by the information both positive and negative thus obtained. You fear that disease is going on in the brain; but is the skin hot?—is there heat of the head?—are there frequent flushes of the face?—and does the accession of each flush seem connected with an increase of agitation and distress, or followed by a deepening of the drowsiness?—is the fontanelle prominent and tense, or are the pulsations of the brain to be felt with unusual force through it?—are the veins of the scalp full, or do the carotids beat with unusual force? What is the character of the pulse;—is it not merely increased in rapidity, but even when examined under exactly similar conditions, does it afford a different result each time? Do you find it irregular in frequency, or unequal in the force of its beats, or even distinctly intermittent? Again, what is the state of the pupil?—is it generally contracted, as if to exclude light as much as possible from the over-sensitive retina, or is it usually dilated, and does it act slowly, as though disease had deadened the sensibility of the nervous system?—or do the pupils of the two eyes not act simultaneously, but one more readily than the other? Do the pupils oscillate under the light—at first contracting, then dilating—and either remaining dilated or continuing to oscillate, though within narrower limits, and with a tendency to remain more dilated than at first? Or, lastly, do you find, when the child is roused, this oscillation of the pupil going on under the ordinary amount of light that enters the chamber? Now all of these are indications of disordered functions of the brain, and many of them point to disorder of a very serious kind.

But there are yet other sources from which we must not neglect to seek for information. Much may be learned from the state of the digestive functions. The bowels are almost always disturbed: usually, though not invariably, constipated, while nausea and vomiting are seldom absent. I am not acquainted with any one symptom which should so immediately direct your attention to the brain as the occurrence of causeless vomiting, and especially its continuance. At first, perhaps, the child vomits only when it has taken food; but before long the stomach will reject even the blandest fluid, and then the efforts of vomiting will come on when the stomach is empty, a little greenish mucus be rejected, with no relief, the retching and vomiting soon returning. I shall have occasion to dwell again upon the importance of this symptom, which I have known to continue for several days before any other indication of cerebral disease could be discovered. In children of three or four years old this occurrence would scarcely be overlooked: but the case is different with infants, who so often vomit the milk when ill that the mother or nurse might fail to mention it to you if you did not make special inquiries with reference to that point.

The manner in which the functions of the respiratory organs are performed, is also not to be overlooked. That peculiar, unequal, irregular breathing, to which the name of cerebral respiration has been applied, though of considerable value when present, is sometimes not observed, or not until the disease of the brain is so far advanced that all questions of diagnosis have long been set at rest. There is, moreover, a short, hard hacking cough, which you may sometimes hear, and the import of which you ought to be acquainted with, since it betokens disease of the brain and not of the lungs. There are peculiar sounds, too, which sometimes attend respiration, and are known as indicating disturbance of the nervous functions. To these, however, I shall have to return hereafter, since they

betoken a disease of a serious nature, known by the name of spasmodic croup, and which I must, in the course of these lectures, describe in full.

ART. 97.—*Excerpta from Lectures on the Diseases of Children.*

By DR. WILSHIRE.

(*Medical Times*, July and August 1847.)

1. *Diagnosis of Tubercular Meningitis.*—[The principal affections with which the above severe disease of infancy is liable to be confounded are mentioned by Dr. Wilshire in the following rotation:—Simple acute meningitis, secondary simple acute meningitis, meningeal apoplexy, hypertrophy of the brain, atrophy of the brain, cranio-tabes, phlebitis of the sinuses of the dura mater, remittent fever, dental irritation, hydropcephaloid disease.]

1st. In *simple acute meningitis*, chiefly liable to be confounded with the tuberculous variety in the second stage, you will have the accession very acute, all the symptoms intense, and the headache and agitation extreme; the febrile erethism very considerable, the vomiting of bilious matter not necessarily complicated with constipation, and coma rapidly coming on. The aggravation of the disorder is quickly progressive, and death very soon closes the scene. In *tuberculous meningitis* the accession is not acute, but often very insidious, the primary symptoms not being severe and grave, except the vomiting, and which is accompanied by constipation. Generally the intellectual functions are normal, save in their gradual torpidity as the disease progresses. The course is comparatively slow, irregular, often very much prolonged.

2d. *Secondary simple acute meningitis* is preceded by well-known primary symptoms of a special disorder, such as an eruptive fever, &c. It is not necessarily preceded by constipation, but often by active diarrhœa; sometimes by general anasarca, or acute local inflammation of the chest, abdomen, &c., with deficient secretion of urine, and with high fever.

3d. *Meningeal apoplexy* and *cerebral hemorrhage* can but rarely tend to hinder your diagnosis, although you will find a very interesting case in Rilliet and Barthez, of a girl who died after exhibiting the symptoms of the tuberculous disorder—some other symptoms, however, being superadded; and after death a large clot was found in the left optic thalamus. The comparative rarity of these hemorrhagic affections, the very great irregularity of their symptoms, and the very early supervention of convulsions, will help to assist your diagnosis. I may refer you, however, to the writers I have named.

4th. *Hypertrophy of the brain* is more likely to be confounded with *chronic hydrocephalus*, in some of its forms, than that with our present malady, except, perhaps, in those cases alluded to by Mauthner, where the hypertrophy assumed an active character in consequence of the cranial parietes not yielding to the rapidly increasing growth of their contents, and in which the symptoms were those of active cerebral disorder and of compression. But “we do not believe that the diagnosis between induration and acute hydrocephalus is so difficult as writers pretend; not that it is so easy to recognize the former malady, but because, with a little attention, we can easily exclude the possibility of the meningitic disorder.” (See Rilliet.) *Partial induration* has been described by one or two continental writers, the symptoms of which are very obscure, chiefly consisting in very rapid emaciation, convulsions, and torpor.

5th. In those cases of *phlebitis of the sinuses of the dura mater* which have been recorded, and in which the patients died after presenting cerebral symptoms, such as giddiness, syncope, dilatation of the pupils, strabismus, grinding of the teeth, alternate contraction and relaxation of muscles, &c., secondary affections have given rise to these symptoms, such as hemorrhage, effusion of fluid in the ventricles, softening, capillary apoplexy; or these lesions have existed, and yet the symptoms were such that no connection could be traced between them. In some examples death has been quite sudden.

With respect to the diagnosis between “acute hydrocephalus” and febrile diseases, I may remark that *typhoid fever* is not very frequent in children; the tongue is brown and loaded, diarrhœa often present, and heat of body and thirst in the early periods more intense; the pulse is more equable, as is also the respiration;



there is much more debility from the onset, and an absence of convulsions, paralysis, &c., and other peculiar cerebral symptoms usually seen in the affection of the brain.

6th. *Remittent fever* is more common, abdominal complication frequent and evident, and the lips red, chapped or fissured, and retracted in bad cases. In the milder, the regular remissions and exacerbations of the fever, heat, the thirst, the readily-procured evacuations, the often brightness of the eye, and the state of the tongue, together with, in many cases, the existence of stomatitis, will help the diagnosis. In the brain disorder the abdominal or digestive complications are attended with well-known cerebral symptoms and tense fontanelles, and the lips, tongue, heat of body, thirst, and appearance of the eyes are not those of the febrile disorder.

Now and then, even with your greatest attention, however, you will find yourselves at a loss to diagnose between certain forms of remittent fever and particular stages of tuberculous meningitis. I have now and then been at a loss to say whether the head symptoms which were present, together with much heat of skin, febrile exacerbation, and derangement of the digestive system, were really secondary to the febrile disturbance, and were to be viewed as likely to yield as the fever subsided, and that they were only evidences of temporary irritation of the nervous centre. In such cases I have always acted, however, very carefully, as I know that this temporary cerebral irritation and congestion of the nervous centre, not uncommon in the remittent fever of childhood, may, in a scrofulous child, lead on to perfect development of an intercurrent form of the true meningitic disorder. Upon this point, however, I shall treat more fully when I speak to you of the fever in question.

Now and then you may be called to a case on account of the fears entertained from brain symptoms present, even accompanied with convulsions. Perhaps the next day you will find that they have entirely subsided, and that the little patient is covered with one of the exanthematous eruptions. But a fortnight ago I was called to a case of this description, and on my second visit found the infant covered with a dark measly eruption; the child laboured, in fact, under that disorder which is called *rubeola sine catarrho*. But in these cases, at least those which I have seen, of the exanthemata being ushered in by head symptoms, there has not been the constipation which is observed in the meningitic disorder, nor in the younger children the tense fontanelles. In *small-pox*, which you meet with amongst the children of dispensary practice, you will often find vomiting and head symptoms usher in the malady, and it is in this exanthematous disorder that you will have to be most upon your guard in your diagnosis. I think you can better tell what is coming in *scarlatina* than in the other eruptive fevers, for here are from the first a peculiar state of the tongue and dryness of the mouth, with a strange sort of odour of the breath, even from the very first, that are not so likely to mislead you. In *measles*, too, you will, of course, mostly have the affection of the mucous membrane of the eyes and nasal passage, &c., to guide you; but, as in the case I have just told you of, they may all be wanting. In this case the eruption receded very soon, but the infant was considered to be going on so well that my attendance was no longer required; but I heard from the family attendant that four or five days afterwards it died suddenly in convulsions.

7th. The cerebral irritation which often intercurrs during *difficult dentition* may simulate somewhat the premonitory symptoms of tuberculous meningitis. But in these cases, the swollen, tender, hot, and redder gums, and the very great dryness of, or, on the contrary, the continuous dribbling from the mouth, the more irritable disposition, the frequent precedence or coetaneous existence of diarrhoea, will assist you in your diagnosis.

8th. I shall conclude what I have to say on the diagnosis of the disease I have been considering, in making a few remarks upon what Dr. Eliotson has called "spurious hydrocephalus," and to which other names have been given by various writers. You must know that sometimes soon after a naturally weak or badly brought up child has laboured under diarrhoea, or some exhausting disorder, or at a more late period of like affections in a stronger one, there will occur brain symptoms very apt to mislead an incautious practitioner into a belief that they indicate the supervision of our present disorder, or are to be viewed as symptoms of com-

mon hydrocephalus; the truth being that they are the evidences of vital exhaustion, and a very depressed condition of nervous energy—a state to be treated in a different manner from its first appearance to that which you must have recourse to in the other affection.

When I have seen this peculiar condition I have generally observed it in the stage alluded to by Dr. Gooch, viz. the child lying on the nurse's lap, unable or unwilling to raise its head; half asleep, one moment opening its eyes, and the next closing them again with a remarkable expression of languor; there is great heaviness of head, drowsiness, but no pain or active febrile symptoms present. In addition to these symptoms, and on which I lay great stress, are the great pallor of the face and coldness of it, as well as of the extremities. These symptoms may be followed by "coma, stertorous breathing, and dilated and motionless pupil," or even squinting and blindness. (Maunsell and Evanson.)

Dr. Marshall Hall, to whom we were first indebted for having our attention prominently directed to this affection, divides it into two stages: the first being that of irritability, the second that of torpor. In the first "the infant becomes irritable, restless, and feverish, the face flushed, the surface hot, and the pulse frequent; there is an undue sensitiveness of the nerves of feeling, and the little patient starts on becoming touched, or from any sudden noise; there are sighing and moaning during the sleep, and screaming; the bowels are flatulent and loose, and the evacuations are mucous and disordered." Now, if these symptoms are not properly treated by the administration of gentle stimulants and cordials, the second stage of Dr. Hall will follow, and the patient sink in a state of collapse. The second stage, with which I am alone familiar, is marked by the symptoms I have just spoken of. However, I cannot do better than refer you to the last edition of Underwood, in which you will find much more about the disorder.

If you were called to a case where the child is lying, as I said, on the nurse's lap,—either very drowsy, or in a state of great languor, or in deep stupor (for I do not know what else to call it), with pale, cold face and extremities, dim eyes, perhaps squinting or dilated pupil, or with, now and then, twitchings, or even convulsions, and irregular or suppressed respiration,—you should at once inquire if the child has had diarrhœa for some time, or has been treated by much depletion in any way for a presumed inflammatory disorder; for, if such has been the case, it is in all likelihood suffering under intense depression of vital power, and it must be treated accordingly. It is in this, also, that I agree with Gooch, in only having seen this "spurious hydrocephalus" occurring after exhaustion from diarrhœa and depletory treatment; and this is a very great point for me to help myself in the diagnosis. On the other hand, Dr. Hall, in most of the cases he has seen, says that "the child has had no previous illness, and the leeches have been applied subsequent to the drowsiness, and as a remedy for it." But still Dr. Hall admits that a state of *exhaustion* had existed previously in all the cases he had seen or heard of.

II. *Treatment of tubercular meningitis.*—Of the purely *antiphlogistic* plan I need say little; it is not applicable to our present disorder, and experience proves this, since, although it has been vigorously employed in all stages of the malady, it has no effect in warding off the fatal termination; on the contrary, in many instances it will *hasten* the event. Although then we cannot hope, like Dr. Maxwell, to cure sixty out of ninety cases of acute hydrocephalus by placing the child in the horizontal position, opening the jugular vein, and continuing the bleeding until the pulse is imperceptible, yet we may hope to relieve somewhat the local congestion or increased vascular action which so frequently accompanies the early periods of the malady by applying a few leeches behind the ears, or cupping at the neck, as I have told you, and, therefore, need not dilate more upon the point here, simply enforcing on your attention the fact, that in tuberculous meningitis the inflammatory action, when present, is not of that description which is *materially* benefitted by the loss of the circulating fluid, however and to what extent it may be brought about.

In Mr. Field's "Veterinary Records" you will find two cases of hydrocephalus, related as occurring in the horse, and which, on dissection, showed the ventricles distended with water, &c. These horses were freely bled, and rapidly became

worse, and died. Mr. Field remarks that "an animal, under such circumstances, cannot bear the loss of blood, extreme restlessness, &c. supervening."

With respect to the *mercurial* plan, I might say a little more in its favour, and others you will find who place great hopes upon it. But even here all that I look for is the value of the mercurials exhibited in producing continued action on the bowels, and exciting more biliary secretion from the liver. As to the specific power of mercury in stopping the progress of the disorder I have no belief, or in its supposed virtue of hindering the ventricular effusion, as is rested upon by some. Many, in this disease, have given enormous quantities of calomel: one case is on record in which 310 grains were given, and an abundant salivation was produced, and the child is said to have recovered. Dressing the blistered surfaces with the mercurial ointment, along with the internal exhibition of some one or other form of the metal has commonly been adopted. You will find that many of the cases of averred recovery from acute hydrocephalus have been treated by this plan; and, says Dr. Bennett, "weighty and varied testimony in favour of calomel might be adduced from numerous authors who have written especially on this subject, from Dr. Dobson down to the present day."

The next general plan which has been by some adopted is that of powerful and constant *purgation*, and I am myself inclined to lean to it more than to any other, when adopted in combination with counter-irritation. I think Riiliet and Barthez do not bestow by any means the credit upon this method which it deserves. Whytt and Rush strongly recommended it, Abercrombie gave croton oil, and Clutterbuck and Elliotson elaterium. The latter I have administered myself. I prefer, however, keeping up purgation by means of aloes and sulphate of potash, and injections of castor and turpentine oils.

Of *counter-irritation* and *derivation* by means of mustard cataplasms, blisters, and dry cupping, &c., I have a high opinion—so far, at least, as I can have in this disease of anything applied as a means of cure. Many persons of repute have recommended them, often differing, however, where and when they should be employed. Some blister the scalp, others the neck, or the mastoid processes, whilst others advise the epigastrium or lower extremities to be attacked. "Hot-water moxas" on the posterior portion of the nape, and the common moxa to the occiput and behind the ears, have also been recommended. Myself, I prefer, on the whole, blistering behind the ears, and repeating mustard poultices to the nape of the neck, whilst iodine ointment is applied to the shaven scalp, and pediluvia of hot water containing salt or mustard are had recourse to in the earlier stages of the malady; afterwards a blister to the whole scalp, kept open by an irritating ointment.

Some have given largely *narcotics* and *sedatives*; and a few agents, like digitalis and opium, have received high encomiums, especially the former. I must refer you to Dr. Bennett's book for information upon this method, however, as I know nothing about it myself, never having witnessed any one symptom, viewed in relation to the generally observed post-mortem appearances met with in this disorder, which appeared to authorize me in adopting it. Yet it has great names in its favour.

I advised you, you will recollect, to give *iodine* internally, and use it externally as well; and you must know that this agent has lately been very strongly recommended both by some of us and the continental practitioners. I am disposed to place much more reliance on it than on mercury, viewed as a specific agent in controlling scrofulous inflammation and its effects; as, also, over those aberrations of simple nutrition so characteristic of the scrofulous constitution, and which I have already fully touched upon, it has more power than anything else. In practice I have seen decided benefit from its use. With regard to its mode of administration, &c., I have spoken to you before. Some few have more strongly recommended the combination of iodine with mercury in the form both of the proto- and deuto-ioduret of mercury, and each has been said to have produced cures. I gave the latter in two cases which proved fatal. I followed the formula quoted by Bennett from Schmidt's "Jahrbücher."

R.—Calomel, gr. viij;  
Iodini, gr. j;  
Sacchari albi, gr. lxxx;

M. fiat pulv. et divide in partes xvj æquales. Sumat j 4ta quaque horâ.



In preparing the deuto-ioduret, the calomel should be first rubbed with the iodine and afterwards with the sugar.

Excitants and cordials have been rightly recommended in the latter stages of the disorder, and I have seen a temporary rousing of the powers from their use; but at this period, whatever is done, the child always dies.

Certain special agents or *empirical* means have been, of course, recommended, such as musk, oxide of zinc, phosphorus, and quina. Nor has the tincture of cantharides been forgotten, or colchicum, or enemata of tobacco!

ART. 98.—*Treatment of Chronic Hydrocephalus.* By Dr. WEST.

(*Medical Gazette*, Aug. 13, 1847.)

Dr. West does not know of any plan, on the whole, more likely to be of service than that of Professor Gölis, of Vienna. The latter advises, as the result of many years' experience, that the head should be shorn, and that one or two drachms of diluted mercurial ointment should be rubbed into the scalp daily. The head is at the same time to be kept constantly covered with a flannel cap, and a quarter or half a grain of calomel should be given twice a day, unless diarrhoea ensues, when inunction alone is to be proceeded with. This plan should be persevered in for thirty or forty days, when, if the patient appears to improve, the remedies may be gradually diminished, but the cap should still be worn. Should no improvement appear after the lapse of six or eight weeks, a diuretic may be added, and a blister frequently be applied to the back of the neck.

Bandaging the head, as was recommended by Mr. Barnard, of Bath, (*Cases of Chronic Hydrocephalus, &c.*, 1839,) is considered by Dr. West as a valuable adjunct to other treatment. He considers the following directions given by Trousseau on this point as worthy of attention: Strips of diachylum plaster an inch broad are to be stretched—first, from each mastoid process to the outer part of the opposite orbit; secondly, from the occipital protuberance along the sagittal suture to the root of the nose; thirdly, across the whole head in such a manner that the strips shall cross each other at the vertex; fourthly, a strip is cut long enough to go thrice round the head. Its first turn passes above the eyebrows, above the ears, and a little below the occipital protuberance, so that the ends of all the other strips project about a fourth of an inch beyond the circular one. These ends are then doubled back upon the circular strap, and another turn round the head is taken over them. By this firm and equable pressure upon the head is sustained. Some care is necessary in watching any symptoms of cerebral compression under this treatment.

[Dr. West does not consider compression as applicable to all cases of the disease, and regards it as a dangerous proceeding when any appearance of active cerebral disease exists. Speaking of puncture of the cranium in chronic hydrocephalus, he mentions that of 63 cases 18 terminated favourably, but considers the cases not to be reported with sufficient accuracy to warrant our placing implicit confidence in them. He regards these cases only as favourable to the operation in which the fluid is contained in the arachnoid sac, and in which the general health is not materially disturbed.]

ART. 99.—*Remarks on the Diagnosis and Treatment of True or Inflammatory Croup.* By DR. MEIGS.

(*Amer. Journ. of the Med. Sciences*, April 1847.)

[The author relates seven cases of inflammatory croup, two of which proved fatal. These our space does not allow us to detail, but we give, with some abbreviation, the practical remarks to which they serve as a text. In reference to the history and diagnosis of the disease, he observes:—]

After a careful study of the highest authorities on these points, we are induced to believe that the descriptions of Barthez and Rilliet are the most accurate. These authors describe first pseudo-membranous laryngitis, of which the cases reported are instances. They next consider spasmodic laryngitis, the stridulous laryngitis of Guersent. This is the affection to which the term croup is familiarly applied. It attacks children *suddenly*, generally in the night, and during good

health; and it seldom lasts beyond a few hours, or one or two days. It does not come on slowly and insidiously, like true inflammatory croup; it is not accompanied by exudation of fibrine, and is a disease of comparatively little danger. It is different, also, from the laryngismus stridulus of English writers.

Both Rilliet and Valleix are careful to draw a distinction between inflammatory croup and spasmodic croup: indeed, the difference is so marked that we are surprised at their being ever confounded; they are widely different diseases, running a different course, requiring a different treatment, and having a different termination; one so fatal as to be deemed incurable, the other seldom ending fatally. The pathological element in one is spasm, of the other violent inflammation of the larynx, trachea, and even of the bronchia, with the formation of false membranes.

Laryngismus stridulus is different from either pseudo-membranous laryngitis, or spasmodic croup. Spasm of the glottis is a chronic disease, lasting weeks or months. It is not accompanied by fever; it is attended by general convulsions, which are slight at first, but become more marked as the disease progresses. These differences are sufficient to distinguish the disease, which is almost unknown in France and America, from spasmodic croup, which is as common as the other is uncommon.

[In proof of the infrequency of spasm of the glottis in America, the author, whose experience is extensive, states that he has only seen one instance of it, which he reports. He then alludes to another form of spasmodic laryngeal affection in the following words:—]

This is the disease popularly known in America by the phrase "breath-holding spells." We have met with it only during the first dentition. It appears to be the result of a sudden closure of the glottis, or of a spasm of the diaphragm, so that the child for a time ceases to breathe. After a few seconds it bursts into a scream, which lasts till it has passed. These attacks are produced by various causes, as fright, pain, &c., and, where the predisposition is strong, occur whenever the child cries.

[The Editor has had frequent opportunities of witnessing the above state in his own children, two of which seldom or never cry violently without having an attack such as the author describes. It appears to him to depend upon spasm of the diaphragm, and to occur during the state of expiration. He has seen the breath held till a state of lividity of countenance has been induced calculated to excite considerable alarm, and has sometimes been obliged to induce an excitomotor act of inspiration by dashing cold water on the face; the inspiration is then followed by a loud cry, and the state of spasm is not repeated during the same fit of crying.]

After the above remarks on the diagnosis of these laryngeal affections of children, the author proceeds to make some comments on the treatment employed by him in the cases which he narrates:—]

Depletion was used in all the cases—in all but one blood was taken by venesection—in that instance leeches were substituted. The quantity of blood taken varied.

Emetics were used in all the cases: the one employed on all occasions but one was powdered alum—the exception was one in which the bulk of the medicine was an objection: in this case ipecacuanha was substituted. In the same case small doses of tartar emetic were given. In three other cases the *Mel scillæ* comp. was given as an expectorant after the violence of the symptoms had subsided.

The principal means employed in addition were calomel and caustic applications to the fauces. Calomel was used in all the cases but one—that one was fatal. The largest quantity given was 40 grains—the smallest, 8 grains.

Caustic applications to the fauces were used in all but two cases—that employed was a solution of lunar caustic, grs. x to ʒj, applied with a camel-hair brush. The remedies which appeared to have the most decided influence were emetics and calomel.

The alum was given in doses of a teaspoonful with syrup or honey, repeated in 20 minutes if necessary—a second dose is seldom required. It has the advantage of operating without inducing exhaustion; we have exhibited the above dose

two or three times a day, for several days, without observing dangerous prostration.

ART. 100.—*On the Pneumonia of Childhood.* By Dr. FRIEDLEBEN, of Frankfort.

(*Archiv für Physiolog. Heilkunde*, 1847, and *Month Journ.*, June 1847.)

1. *Lobar pneumonia.*—Friedleben divides the symptoms of infantile pneumonia into four stages: 1st. Commencing stage, indicated by short breathing, hot skin, quick pulse, thirst, dry nose, abdominal breathing. Sometimes, at this stage, the disease is mistaken for head affection, in consequence of the presence of convulsions and vomiting. The true nature of the case is then best demonstrated by dullness on percussion. On auscultation merely coarse breathing and dry râles are heard; distinct pneumonic crepitation is rare. 2d. Advanced stage (red hepatization): dull sound on percussion, bronchial respirations were never absent. It is remarked that while the upper half of the chest remains motionless, the lower half, from the seventh to the ninth rib, is forcibly pushed outwards in respiration; this symptom is always observed in pneumonia, whatever part of the lung be affected. Neither cough nor pain are constant symptoms—the cough, when present, is always dry, and sometimes painful; and when pain is present, it is remarkable that the little patients always refer the seat of it to the scrobiculus cordis. It has been stated that the breath of children affected with pneumonia is hot, but Friedleben found this was not the case in the great majority of cases, even when the inflammation was remarkable for its extent and intensity; but the skin of the thorax uniformly felt preternaturally hot to the finger. In general the little patient lies on the back. However incredible it may appear, even this stage of pneumonia may be overlooked, unless it be made a rule to examine the physical signs of the chest in every case of acute disease. 3d. Stage of transitus (crisis veterum): when the red hepatization does not, by its great extent, cause the death of the child, it may pass into the stage of convalescence; in which case the decline of the physical and other signs takes place in the usual well-known manner. The cough, when previously absent, now commences, and, in most instances, without perceptible expectoration, since the child swallows whatever is brought up from the air-tubes. One of the most favourable signs is the spontaneous discharge of mucus from the nose, even when the child is not lying on the belly. Lastly, red hepatization may be changed into gray hepatization, or the stage of suppuration. Sinking of the pulse, decrease in the heat of the skin, slight sopor and delirium without essential change of the physical signs, intense shaking cold; lastly, the status nervosus of former physicians, or, more properly, the pyemic state, are the symptoms usually met with. In addition to these there are to be met with, in not a few instances, hydrocephalic appearances, which, however, are shown by many post-mortem examinations to be dependent merely on hyperemia of the brain. Friedleben saw recovery after the symptoms of this stage had set in, in two cases only; and the fatality of the disease is the consequence of our mistaking the nature of the disease in its earlier periods. The following case illustrates the necessity for early and careful examination of the chest:

A girl, 4 years old, hitherto healthy and robust, was treated for eight days by a physician. He took no alarm at what was apparently a febricula gastrica, as the little patient continued to play about the room during the whole day. But suddenly the breathing became laborious, the sensorium disturbed, the fever considerably increased. An examination of the chest was now made for the first time, and showed pneumonia of the right lower lobe. It was, however, now too late; and in thirty-six hours more the girl was dead. The post-mortem examination exhibited not only gray hepatization and purulent dissolution, but even a commencing vomica—evidence enough of the length of time pneumonia had been present.

[As to the modification of the symptoms produced by the several periods of childhood, Friedleben has made the following observations:]

During the first year great restlessness, constant crying, dislike of the nipple or sucking-glass, occasional vomiting, and relaxed bowels are the signs of the first stage. In the second stage, the infant now takes the nipple or sucking-glass, and



the skin becomes very hot; at this period the infant cries less than in the former stage, and falls frequently asleep, though he is awakened by the slightest noise. The third stage was constantly succeeded by convalescence or death; never by gray hepatization or suppuration. Induration was observed only once. During the next four years of life the first stage is generally overlooked, unless occasional convulsions or vomiting strike our attention. In the progress of the disease hydrocephalic symptoms become often so prominent as to mask altogether the primitive and chief disease. It is to physical signs alone, then, that we owe a safe diagnosis, and the proper therapeutical indications. True inflammatory hydrocephalus is, according to Friedleben, of exceedingly rare occurrence; the effects of cerebral tuberculization being more frequent. The hydrops ventriculorum cerebri, subsequent to scarlatina, cannot be considered as the result of true encephalitis.

*Lobular pneumonia.*—This form, as a primitive disease, was observed by Friedleben in the first year only. The onset of the disease is betrayed by a striking shortness of breath, and violent abdominal respiration. Percussion and auscultation furnish but unsafe signs. Cough is never absent. The first stage was never examined, for in most cases it terminated directly with the death; in others it assumed a lingering course, and occasioned a fatal termination by affording a substratum for tuberculous deposits, or by passing into perfect induration of the diseased portion.

*Duration and termination.*—In the great majority of children affected with pneumonia, the first stage lasted for twelve hours, the second for three days, the third from five to seven days, after which period decided convalescence commenced. The following case is, however, decidedly exceptional. A boy, five years old, who had played the whole day with his companions, and taken supper as usual, was seized in the night with headache and great heat. When a physician saw him next day at noon his consciousness was already lost, the respiration was stertorous, the arterial pulsation hardly perceptible, the extremities cold, the pupils dilated, the power of deglutition lost; on the same day, at three o'clock, the boy died. The post-mortem examination exhibited a partial arachnitis over the left hemisphere, and completely developed gray hepatization of the upper lobe of the left lung. In this instance, then, the fourth stage of pneumonia was thus developed within from eighteen to twenty hours. According to Friedleben's experience it often happens, that on the termination of pneumonia the little patients cut one or more milk teeth, and when of a more advanced age, even some of their permanent teeth.

*Etiology.*—Heat and cold rank among the causes; and when pneumonia arises from the former cause it is much more fatal, owing to the greater liability to diffuse hepatization and suppuration. From the second to the fifth year is the period when the greatest predisposition to pneumonia exists; after that period the liability becomes much diminished. Among the diseases which dispose to pneumonia are, previous pneumonia, measles, laryngo-tracheitis exsudativa, arachnitis, typhus abdominalis, pleuritis, and pulmonary tubercles.

*Recapitulation.*—1. That true lobar pneumonia is one of the most frequent diseases of childhood. 2. That the anatomical alterations are quite the same as in adults, and that the so-called catarrhal pneumonia is not the proper pulmonary inflammation of childhood. 3. That there is little difference in the course of infantile pneumonia, except in the greater liability to suppuration. 4. That pleuritis is not a common complication. 5. That in most cases both lungs are affected. 6. That though sometimes secondary, it is for the most part of a primitive character. 7. That lobular pneumonia is of rare occurrence, and very uniformly of secondary origin. 8. That the pneumonia of infants has sometimes proved fatal in from twelve to twenty hours. 9. That percussion and auscultation are the only safe grounds of diagnosis. 10. That sneezing is the most favourable sign in the stage of resolution. 11. That on superficial examination pneumonia is often marked by the apparent symptoms of arachnitis, hydrocephalus, and typhus abdominalis.

ART. 101.—*On some Uncommon Forms of Abscess in Children.*—[Mr. Rees alludes to two localities in which abscess occasionally forms in young children, and which

he thinks has not previously been pointed out: these are the antrum and the hip, in the latter case unconnected with disease of the joint. He observes:]

Abscess of the antrum I have met with only twice; it occurred in both instances in young infants, born with the face towards the pubis. I believe it was the pressure of the arch of the pubis which gave rise to the mischief. The following sketch will show that these are not always trifling cases. A child, aged 2 weeks, was brought to me with considerable swelling and inflammation of the left cheek, the redness extending round the eyelid, and just below the eye there was an appearance of pointing; the swelling was deep-seated, implicating the floor of the orbit, so as to protrude the eye to a great extent; the conjunctiva is inflamed, and there is chemosis; the left side of the palate was observed to be depressed so as to form a tumour projecting into the mouth; ulceration had commenced along the dental seam, and one of the rudimentary molar teeth was visible. As the nature of the case was apparent, I extracted the tooth, and thrust a director upwards which easily found its way into the antrum, and was followed by a slight discharge of pus. On the following day I opened the abscess on the cheek, near the inner canthus, but the swelling of the face was little if at all diminished. I therefore injected warm water into the antrum which was followed by a copious discharge of matter, and from that time the case rapidly improved. The openings on the cheek and in the mouth remained fistulous for some time, but finally closed.

Abscess of the hip is not a less troublesome case. I have seen as many as five examples, four of which were in children under two years of age. The extreme pain, the short cry uttered when the infant is moved, and the anxious expression of countenance, led me, in two cases, to suppose at first that cerebral disorder was impending, until swelling over the gluteal region declared the nature of the disease. The matter in these cases was bound down by the fascia lata, and, unless easily discharged, burrows round to the front of the joint, inducing great pain and constitutional disorder. The treatment I have adopted is to lance the abscess behind, and enlarge the opening into the fascia under the guidance of a director.

[Underwood (*Diseases of Children*, last edition) alludes to these abscesses, and as he mentions them in juxtaposition with morbus coxarius, was evidently aware of their diagnostic relations with that more serious affection.]

*Medical Gazette*, May 14, 1847.

# REPORTS

ON THE

PROGRESS OF THE MEDICAL SCIENCES.

*July—December, 1847.*



THE intention of the following Reports is to pass in review the principal additions to each department of Medical Science, which have been placed on record during the preceding six months. It is not contemplated that they should be confined exclusively to the notice of what is new; any fact or doctrine which may be considered practically useful, will, although not strictly novel, be regarded as worthy of commemoration. It must be obvious to all who are aware of the immense mass of information which is almost daily put forth by the medical press of this and other countries, that the notice of every subject would be an impossibility. It therefore devolves upon the writers of each Report to select only such articles for retrospection as may possess superior recommendations, either of an intrinsic character, or in relation to the main end and aim of all medical knowledge—the alleviation of suffering and the removal of disease.

## I.

# REPORT ON THE PROGRESS OF PRACTICAL MEDICINE, PATHOLOGY AND THERAPEUTICS.

BY THE EDITOR.

---

[The figures in brackets refer to corresponding Articles in the Abstract.]

---

## PART I. GENERAL PATHOLOGY.

### § I.—*Diseases of the Blood.*

1. *Scurvy*.—The great prevalence of this once well-known, but now comparatively rare disease in various parts of the kingdom, has during the last few months given rise to several communications of greater or less value, of the principal of which it will be our province to give an analysis in the present Report. In our notice of them, we shall take them as nearly as possible in the succession in which they were published.

—Dr. Shapter gives a description of the disease as it appeared in Exeter and its neighbourhood. In this epidemic, the initiatory symptoms are described as those indicative of general debility, to which certain more special phenomena were superadded. The patient complained of weakness and listlessness, had a sallow countenance, and *pale* and *contracted* gums. The latter symptom is pointedly alluded to, as in all cases preceding those conditions of the gums, which have usually been considered as characteristic of the scorbutic malady. The tongue is for the most part clean, and the pulse small, but not quicker than natural. As the disease makes progress, the debility increases, and pains in the limbs become severe and general. The gums now assume the peculiar swollen and spongy aspect, the breath becomes fetid, and the integuments exhibit petechial spots, ecchymoses, &c. In the last stage of the disease, of which the author has seen but one example, the breathing becomes slow and laborious, and a sanious fluid is secreted by the bronchial membrane. In the single case alluded to, death took place by coma.

After detailing several examples of the disease, the author enters upon certain general remarks much to the following effect:—He directs particular attention to the pale and contracted gums as the precursor of the spongy condition, and comments upon pain in the loins as a frequent symptom in his cases, and one which he considers to depend upon neuralgia of the lumbar nerves. In his inquiry into the etiology of the disease, he regards cold as an auxiliary cause only, and looks to error in diet for the primary exciting causes. After analysing the dietary of the patients which came before him, he fixes upon the absence of the potato as the *fons et origo mali*. He shows on the one hand, that there was no lack of good bread, and other farinaceous food, and on the other hand, adduces the evidence of Sir G. Blane and others, as to the positive antiscorbutic properties of the potato. He states also, upon the authority of Dr. Baly, the physician to the Milbank Penitentiary, that scurvy was exceedingly frequent among one set of convicts, who were only allowed half a pound of potatoes per week, while among another class, whose allowance was five pounds, the disease was unknown. This, it must be understood, was the only difference in the circumstances under which the two classes were placed. The preservative virtue of the potato is supposed to be due to the presence of tartaric acid.\*

\* *Prov. Med. and Surg. Journal*, June 2, 1847.

—In Nottingham, Mr. Stiff observes, that the disease was prevalent among the poorer classes, who have suffered severely from deficient and dear provisions, and more particularly from the absence of succulent vegetables. This gentleman also traces the disease more particularly to the loss of the potato. He remarks, that in the union of which he is the surgeon, potatoes formed an article of diet until Christmas (1846), and on account of their scarcity, Swede turnips were substituted with advantage until March 20th, when these were discontinued. It then became necessary, in consequence of the failure in the supply of both vegetables, to substitute Indian meal and rice, which, together with bread and meat, formed the following dietary:—For breakfast and supper daily, bread with tea, or milk-porridge; for dinner, Sunday, beef seven ounces, and hominy or crushed Indian meal; Monday, bread with meat-broth; Tuesday, suet-pudding; Wednesday, hominy with treacle and vinegar-sauce; Thursday, beef and hominy or rice; Friday, bread and broth; Saturday, bread and pea-soup. For the aged and infirm, bread and cheese, with beer twice a week at supper.

The author further states, that from about a month to six weeks after the disuse of the potatoes and Swede turnips, symptoms of scorbutus broke out amongst some of those inmates who had resided for a length of time in the union workhouse, characterized by debility, sallowness, and in several instances jaundice, petechiæ, bruise-marks, spongy and bleeding gums, neutral urine of high specific gravity—in some 1.027 at 60° Fah.

The cause of the endemic was here apparent, and means were immediately taken to prevent its spread or recurrence. The situation of the workhouse on the new red sandstone, in an elevated position, facing the country; well supplied with water, and well ventilated; dietary sufficient in quantity, no salt provisions of any kind being supplied; the time of year, namely, end of winter and beginning of spring, corresponding with its appearance in other times and countries; the period of a month or six weeks elapsing after the continuous use of farinaceous food; the subsequent dietetic alteration—all tend to strengthen the opinion that the want of a fresh succulent vegetable, containing a vegetable acid, was the sole cause of the malady.

As circumstances connected with the epidemic worthy of remark, the author mentions that neither the children at the breast of those who were subjects of the disease, or of others, suffered from it; and that he did not notice any instance under five years of age.

The disease as observed by him, commenced with debility, inactivity, sallowness of the countenance, and flying pains in various parts of the body, before the gums take on their remarkable appearance. At first the margin of the gum is livid for one or two lines, even when the mouth and lips are anemic, and this appearance resembles the lead symptom, but is not so well defined; the gum swells, separates from the tooth or stump, becomes rounded and spongy, secretes more tartar, and bleeds; in some cases the gums have been so enlarged behind and in front of the teeth that these could not be approximated, the teeth loosen, and the blood, putrefying in the mouth, causes a most fetid odour. These marks of the disease are most apparent where the teeth are carious, or where there are bad stumps; and sponginess with bleeding may exist around molars, whilst the gums encircling the teeth in front, if they are sound, may not be at all influenced. In old and edentulous subjects the gum symptoms do not made their appearance, but I am not aware whether this has been noticed by writers on diseases of seamen. Sailors afflicted with scurvy are generally able-bodied men, and few are so old as to be without teeth, so that thus it may have escaped comment.

In boys, petechiæ appeared on the legs, but were often absent when the gums were advanced to the spongy state: ecchymoses were infrequent and slight. In adults both existed, the petechiæ appearing generally before the bruise-marks. In old people these effusions of blood took on a different appearance. In most cases there was universal sanguineous effusion, or congestion of the feet and legs, bruise-marks and petechiæ frequently co-existing.

The treatment adopted successfully was the substitution of cabbage for Indian meal, rhubarb puddings, lettuce, &c., with imperial as a beverage, together with citric acid as a medicine.\*

\* Medical Times, June 21.



—More elaborate papers upon the same subject have likewise been furnished by Drs. Christison, Curran, Bellingham, Lonsdale, Ritchie, &c. The epidemic of scurvy observed by the first of these writers, occurred in the General Prison at Perth, the locality and regime of which are minutely described as introductory to the account of the malady.

The diet of the prison, an important point of attention in connection with the particular object of the author's communication, is minutely referred to. In the standard rates, breakfast and supper consist of porridge and skimmed milk; and dinner of broth, made of meat, barley, herbs, roots and salt; there is some slight variation in the above in the various rates, the difference being in the quantity of bread at dinner, and of oatmeal at supper. There is also allowed a variety of substitutes for the above standard articles; for instance, potatoes for oatmeal, potatoes and milk for broth and bread, butter-milk, or treacle-water for skimmed milk, &c.

Under this state of things the health of the prisoners continued good for four years, and it was not until June of last year, that scurvy for the first time made its appearance, and in October, the author, together with Dr. McLagan, were intrusted with the duty of inquiring into the circumstances connected with its outbreak.

At the time of their visit, these gentlemen found 39 cases of decided scurvy, or of convalescence from scurvy, 37 of them males, and only two of them females. There were also 11 others, 8 of them males and 3 females, whose cases were considered at the time to be suspicious, and who in all probability were affected with the disease in its incipient stage. And in addition, a few others presented obscure symptoms resembling scurvy, but which referred rather to dyspepsia and the irritation arising from decayed teeth.

The first cases observed in the General Prison attracted the notice of the prison officers towards the end of June, or very beginning of July. In July and August the number of new cases was inconsiderable; but they increased in September, and still more in October; and 23 prisoners seemed to have been seized during the five weeks immediately preceding the author's visit. At that time indeed the disease threatened to spread even more widely; for seven decided and three suspicious cases had commenced within ten days before. The physician of the prison, however, Dr. Malcolm, had already resorted to judicious measures for arresting its farther progress. These had already begun to produce their effect; and being applied more extensively, the epidemic ceased to extend, and not a single new case occurred after the 31st of October.

In describing the cases which came under his notice on this occasion, the author thinks it unnecessary to detail with minuteness the phenomena of a disease which has been so often graphically described before. He presents only such a sketch as will identify the epidemic with the true scorbutus of nosographers, or seascurvy.

The disease was to be seen in all stages except that which precedes its fatal termination. In the outset there was the scurvy appearance of the integuments of the limbs, which has been insisted on by authors as an incipient or precursory symptom; together with pain, tenderness and stiffness of the legs, some degree of tension also here and there, especially below the ham or round the ankle; and likewise some fulness, redness, and even lividity of the gums, great tenderness there, causing difficulty in chewing ordinary articles of food, and a tendency to bleeding; but no loss of appetite or any material disorder of any of the digestive functions. In more advanced cases the skin of the legs was mottled with lenticular spots of a brown or livid colour, surrounding the roots of the hairs, and by that circumstance easily distinguished from the petechiæ of purpura, which generally show themselves rather on the free surface of the integuments, where the hairs are fewest. When the disease was fully formed, the legs were more or less swollen and oedematous, very tender, extremely stiff, painful on the slightest attempt at motion, hard, and resisting on irregular spots of no great extent or more uniformly over most of the leg, but especially in the upper part of the ham, and downwards to the termination of the gastrocnemius muscle in its tendon. The parts thus affected presented also diffuse ecchymosed patches of various sizes, or a wide-spread yellowish brownness, like what occurs during the absorption of

ecchymosis from a common contusion; and both of these appearances, but especially the latter, were attended with a peculiar solidity of the limb and a fixedness of the integuments, so that the skin could not be pinched up, as if the integuments had become firmly bound to the subjacent fasciæ and tendons by the effusion into the subcutaneous cellular tissue. In some cases of the kind there were also scattered purple petechiæ as big as a pea, or larger; but this was not a common appearance. In all cases so far advanced as these the gums were much swollen, very livid, and hanging more or less over the teeth in fleshy excrescences, which were made to bleed by the slightest rudeness of touch. There was also a liability to epistaxis in several, to hemorrhoids in a few, and to menorrhagia in one or two women. The pulse was rather frequent; the skin often rather warm; the tongue clean, though not invariably so; the breath fetid, and sometimes exactly as if mercury had been taken; the appetite tolerable or even strong; the bowels constipated; the countenance sallow and bloodless; the mind sluggish, and inclined to gloom and despondency. In those which had begun to yield to treatment, the most important symptom was the formation of various chronic eruptions on the previously ecchymosed limbs, resembling diffuse psoriasis, or in a few instances ichthyosis. Diarrhœa was a rare accompaniment, and an incidental affection only. It is indeed particularly worthy of remark that, notwithstanding the universal prevalence of diarrhœa, cholera, and dysentery, throughout the country at large during last summer and autumn, these affections were comparatively uncommon in the General Prison, whether among the scorbutics or among the prisoners generally. No case proved fatal.

In some instances the affection of the gums was the primary one in point of time; in others the affection of the limbs. In a few incipient cases we had an opportunity of observing either the one or the other singly; but no case lasted a few weeks without both affections concurring. In the generality of cases, the earliest symptom seemed to have been stiffness of the limbs, especially of the knee-joints. But it may be observed that this is an ailment which, as a separate or idiopathic affection, is apt to attack prisoners confined for long terms, and particularly the younger males.

The preceding summary can leave no doubt on the mind of any one, that the epidemic was true scorbutus or sea-scurvy. Having settled this fact, the author considers the circumstances which seem to have regulated its dissemination.

In the first place, he remarks, the disease prevailed to a much greater extent among the male prisoners than among the females.

Among the second place, the disease prevailed more among adults than among the young prisoners.

Thirdly, the influence of previous confinement has proved an important co-operating circumstance.

The last circumstance which has been proved during the Perth epidemic to favour the development of scurvy, is constitutional infirmity. Extensive facts on this head are not easily obtained. But it deserves mention, that among thirteen individuals affected on the 31st of October with strumous enlargement or suppuration of the glands of the neck, or who had very recently recovered from that disorder, no fewer than six had suffered from scurvy, or about one-half.

On surveying what has been written as to the causes of scurvy, it will be seen that almost all observers ascribe it to some error in diet. At first, it was ascribed solely to salted and ill-preserved provisions; subsequently it was found that other errors are equally effectual. Great importance has been attached by some to the mere want of sufficient fresh vegetables, whatever else the food may consist of. Others have seen the disease arise seemingly from a deficiency of salt. Others have traced it to mere scantiness of food. A very liquid diet has been thought another source. A diet too purely animal has been known apparently to act with great intensity. On the contrary, a diet purely vegetable has been suspected to have had the same tendency. The author's observations are believed by him to point out another error still; and thus we arrive at the more general fact; either that various, and very different, errors in diet may all alike occasion scurvy; or that there is some particular cause of the disease, common to all these errors, and which has hitherto eluded observation.

What that particular error was, in regard to the epidemic in question, is the author's next inquiry. He proceeds as follows:—

From the statement formerly given, it appears that the diet was essentially saccharo farinaceous. The breakfast of the great majority of the male prisoners, who were on the third or highest rate, consisted of eight ounces of oatmeal made into porridge with salt and water, and fifteen fluidounces of treacle-water, containing one and one-tenth of an ounce of treacle. Supper consisted of six ounces of oatmeal, made into porridge, and ten ounces of treacle-water, containing three-fourths of an ounce of treacle. Dinner on four days of every week consisted of twelve ounces of wheat bread, and two pints of barley-broth, which contained one ounce of meat, four ounces of (decorticated) barley, about two ounces and a half of turnips, carrots, cabbage, leeks and onions, together with a due proportion of salt. On one day of every week, each prisoner on the third rate had for dinner, in lieu of barley-broth, two pints of pea-soup, containing four ounces and a half of peas, one ounce of meat, and an ounce and a quarter of succulent fresh vegetables, duly seasoned with salt and pepper. On another day of every week, the dinner consisted of twelve ounces of bread, and two pints of barley-milk, made with four ounces of barley, ten fluidounces of skimmed milk, and a little salt; and on another day it consisted of the same quantity of bread, and twelve ounces of white fish.

Now this dietary—which, for convenient reference afterwards, may be called “Treacle third rate,”—is somewhat peculiar in kind. It differs appreciably from that used in Scotland by the general population of the class to which the majority of prisoners belong. Like the food in the General Prison, that of the Scotch working-classes is chiefly farinaceous, or saccharo-farinaceous. But some use a little meat at dinner; and milk is a staple article at breakfast or supper, or both, even when meat is used at dinner, but almost always if no meat be taken at that meal. It is unfortunate that a comparison cannot be drawn between the proportion of the several kinds of nutriment thus used by the general labouring population, and the proportion in the food of the General Prison. No one has yet succeeded in obtaining an accurate account of the average food consumed by an individual of the labouring classes in Scotland, living by his own rule, and in ordinary circumstances. But the proportion of animal food must be considerably larger than in the General Prison treacle third rate, by reason of the milk which forms a staple part of their diet.

It is common for practical men, in enumerating the articles in a dietary, or in estimating the nutriment in the food, of the labouring classes, to omit or undervalue the milk consumed by them, and to regard that fluid as little else than mere drink. But this is an error. Milk is really an article of solid food; being coagulated soon after reaching the stomach. As new milk contains, on an average, 13 per cent. of digestible solids, and skimmed milk 10 per cent., the former actually presents fully one half, and the latter above a third, of the nutriment contained in the lean part of beef and mutton; and of the nutritive solids more than a third in new milk, and above a half in skimmed milk, consist of nitrogenous aliment. Hence, on scientific principles, milk must be a valuable article of food, especially when the food is composed otherwise of little else than farinaceous substances.

The withdrawal of this milk, and the substitution for it of treacle-water, is thus regarded by Dr. Christison, as the main cause of the epidemic, for he observes, that in the first place, no other cause could be assigned; and in the next, that the restoration of milk arrested, and finally cured the disease, without the aid of any antiscorbutic remedy. In a subsequent communication, the potency of this cause is further investigated among railway labourers, but having so freely entered into the former division of this essay, we can do no more than state, in general terms, that the author's views as to the causation of the disease, in the deficiency or absence of milk, appeared to him to meet with further confirmation in the class of patients among whom his latest investigations were carried on.\*

—In the number for August, of the same journal, the above views of Dr. Christison, as regards the etiological importance of deficiency of milk, are clearly shown by Dr. Lonsdale to be erroneous; while, on the other hand, he accumulates

\* Edinb. Monthly Journal, June and July 1847.



a strong body of evidence in corroboration of the opinion more generally entertained, that the disease mainly arises from want of succulent vegetables, and more particularly of potatoes. For the details of the communication, the reader is referred to the original; the conclusions to which the author is led, being as follows:—

1st. As the vegetable world became more and more blighted, man, in common with the higher classes of animals, suffered from causes apparently of an epidemic character, which have deteriorated his condition, and rendered him a more facile victim to scurvy, fever, &c.

2d. That scurvy originates in an error of diet, other supposed causes having little or no influence.

3d. Deficiency of potatoes constitutes the chief error in diet, and is the main cause of the present epidemic.

4th. The use of milk lessens the liability to, but does not prevent its occurrence.\*

The essay of Dr. Bellingham commences with the narration of six well-marked cases of scurvy, which were admitted into hospital under the writer's care; and upon these a general description of the disease is founded, and its identity established with the scurvy of former times, so well portrayed by Lind in 1772. The more prominent symptoms of the epidemic are then enumerated in the following order:

*Appearance of the gums.*—The first appearance of the disease in the gums is slight swelling and increased redness of these parts, with a tendency to bleed, commencing usually upon the inside of the incisor teeth of the upper jaw; but soon extending to both; the swelling gradually engages the gums lining the molar teeth, particularly upon the inside, or it may commence here. When the disease is advanced, the appearance of the mouth is very disgusting, the gums upon both sides of the teeth are red and swollen, presenting a broad irregular surface, and resembling the fungous granulations of certain ulcers, bleeding from the slightest cause, impeding articulation, and almost totally preventing mastication. When more advanced, the gums overhang the incisor teeth, and cover and almost conceal the molars; the breath at the same time is most offensive, resembling that of a person under the influence of mercury, but even more disagreeable. The local application which seemed to answer best in these cases, and which was the most grateful to the patient, was a gargle composed of tincture of myrrh, tincture of bark, and cinnamon water.

*Spots of purpura simplex.*—Spots resembling those of the purpura simplex of Willan and Bateman were among the earliest symptoms; they were always first observed upon the lower extremities, usually below the knees, and were often limited to these parts; in no instance did I notice them upon the face. Many of these spots were small, resembling the maculæ of typhus, or flea-bites; the majority, however, were larger. As they faded they assumed a dull-brown colour, just as is observed in purpura simplex. They were not elevated above the surface; in one or two instances they seemed to be mixed with papulæ, as they were attended with considerable itching.

*Patches resembling purpura hæmorrhagica.*—Large patches, resembling those figured in Willan and Bateman's work as characterizing purpura hæmorrhagica, were observed only in the more advanced stage of the disease; in some instances these seemed as if formed by the union of many smaller patches; their shape was irregular; they were seen most frequently in the vicinity of the joints, particularly upon the inside and outside of the ankles; several were often present in the same patient, and their size seldom exceeded that of a half-crown. In one patient recently in hospital (who, however, showed no other symptoms of scurvy) they had a very unusual site—viz., around each eye, and under the conjunctiva covering the sclerotic coat. It commenced in the cellular tissue about the right eye, and then extended to the globe, and continued to increase until no part of the sclerotic coat was visible, and the conjunctiva covering it had a deep blood red colour. The left eye then became similarly affected, and the patient presented a most extraordinary appearance. After a time the effused blood began gradually to be absorbed, and the patient left the hospital well.

\* Edinburgh Monthly Journal, Aug. 1847.

*Patches resembling ecchymoses.*—Patches of discoloration, resembling the effects of a contusion or bruise, were very common, and were sometimes the first symptom noticed. In the very early stage, the discoloured appearance of the skin might have been mistaken for dirt; after a time the part presented a most remarkable resemblance to the effects of a bruise or contusion, all the shades of colour which are familiar to us after such an injury being present. These patches of ecchymosis were in a great measure confined to the extremities, and were much more common upon the lower than the upper extremities; they were usually seen in the vicinity of the joints; a common situation was the ham, or the calf of the leg, or about the ankles; sometimes they were seen upon the thighs, the front of the wrists, or the arms; in one instance, immediately over the patella. They were almost always accompanied by the spots and patches of purpura already described.

*Swelling and stiffness in the hams.*—A symptom which was sufficiently common was a stiffness of the hamstring tendons, accompanied by hard, painful swelling in the popliteal space. This usually commenced in one limb, and soon extended to the other. This condition was marked by considerable pain on motion, and by patches of ecchymosis upon the part, the space between the tendons of the ham appeared to be filled up, and the swelling extended below the joint to the calf of the leg; the part was hard to the touch, and the patient suffered so much pain upon motion as to incapacitate him from walking, and it was for this symptom alone that he sometimes sought relief. Swelling and stiffness in the hams were sometimes the first symptoms noticed, and sometimes almost the only one present. The local application which appeared to afford most relief in it was “the anodyne liniment” of the pharmacopœia.

*Edematous swelling of the extremities.*—When the disease was at all advanced, more or less swelling of the lower extremities was generally present; this was generally limited to the ankles, and resembled œdema, but the swelling was harder, and did not so readily pit upon pressure; it was also accompanied by increased heat of surface and pain, and the skin was studded with spots and patches of purpura. Although the swelling was usually limited to the ankles, it sometimes engaged the entire limb from the groin downwards. In one case where the swelling was limited to one side, the limb presented many of the characters of phlegmasia dolens; the patient was a female, too, and had been confined a short time previous to its setting in.

*Debility.*—Debility was an early and a constant symptom; at first it consisted merely in a disinclination to exercise, and the patient was easily fatigued. As the disease advanced, the patient became so weak as to be incapable of moving about, or of making almost the slightest exertion, and he was usually further incapacitated, owing to the swelling and stiffness of the hams, or to the edematous swelling of the lower extremities.

*Pains resembling rheumatisms.*—Pains referred to the bones or joints, resembling those of chronic rheumatism, were common; in some instances they were the first which attracted the patient's attention, and they were usually supposed by him to be rheumatic. They set in usually before any spots of purpura appeared, but the gums, if examined, were always found to be engaged at the same time.

*Countenance.*—The countenance was always characteristic, particularly when the disease was at all advanced; it was then somewhat bloated and anemic; the cheeks and lips being blanched, with a yellowish tinge in the skin, at the same time being more or less expressive of anxiety. Sometimes the cheeks were much swollen, the patient was unable to articulate, and resembled a person suffering from severe toothache.

*Palpitation: Dyspnœa.*—In few of the cases which I have met with were palpitation or dyspnœa much complained of by the patient. The action of the heart was usually somewhat more rapid than natural, and the pulse was small and feeble. No bruit de soufflet was ever audible on auscultation over the large arteries, nor was bruit de diable ever heard in the viens of the neck, though, from the anemic appearance of the person, it might *a priori* have been expected.

*Hemorrhages, &c.*—No hemorrhage occurred in any patient under the author's care from any part of the alimentary canal; the bleeding was almost confined to

the gums; in one patient, a female, epistaxis occurred twice; in another the disease set in with menorrhagia, which yielded to the ordinary remedies. No patient presented ulcers upon the extremities or other parts, such as have been described by Lind and the older writers upon scurvy.

*Appetite: state of the bowels.*—The appetite in almost every case was good, and remained so all through; the tongue was usually clean, but pale, and the bowels were generally regular.

In reference to the causes of the epidemic, the author remarks that the subjects of the preceding cases appeared all to have had a sufficiency of bread; others had meat in addition, with sometimes wine or porter; none suffered from an absolute deficiency of food; but all agreed in not having used fresh vegetables from the period of the failure of the potato crop of last year. It is clear, therefore, that the cause of the present epidemic may be traced to the absence of the potato from the dietary of the poor; and it is equally clear that a diet of bread, with or without meat or broth, is incapable of preserving the body in health, and tends to develop scurvy; while we know, from long experience in this country, that a diet consisting solely of the potato is capable of affording sufficient nourishment, and of preserving the body in perfect health.

Now, he continues, the potato is placed by theorists nearly at the bottom of the list in the scale of articles of nutrition; indeed it has been assumed to consist of little besides water and carbon. According to the Liebigian theory, carbon, which is a large constituent of fat, but contributes hardly anything to muscle or bone, abounds in the potato, whilst the constituents of bone and muscle are abundant in peas, beans, wheat, oats, barley, and rye; *ergo*, the latter are much superior to the former as articles of food for the labouring population; and philanthropic individuals have calculated that an Irishman who consumes daily ten pounds of potatoes would gain more nourishment and strength from a few ounces of peas or beans. Indeed, if all we read about nitrogenized and non-nitrogenized articles of food were correct, the potato would have fallen into disrepute long since; and it ought by itself to be incapable of supporting the strength of a labouring man; although for more than half a century it has constituted the sole food of the great majority of the peasantry of this country, and we believe a healthier or a hardier population was to be met in few countries, contrasting sadly with their present altered aspect, after a diet for some months composed of more highly nitrogenized substances.\*

—The next communication on the subject of scurvy which we have to notice is one of a very elaborate nature, by Dr. Ritchie, of Glasgow, giving an account of the epidemic, as observed by him in the infirmary of that city.

The general symptoms of the disease, as mentioned by this writer, were such as suggested the idea of a low state of health, amounting often to a condition of absolute cachexia; the aspect was depressed and exhausted; there was a sallow, lemon-coloured, or leaden complexion, with sinking of the eyes, which were sometimes of a glossy whiteness, at others icteroid, and often encircled by a dark areola; the nose was pinched, the lips, inner surface of the cheeks, and the fauces and tongue were blanched, except where the latter were stained by ecchymoses, or occupied by ulcerations or chaps; the breath was offensive, the gums were livid, boggy, or spongy, notched deeply into conical processes between each pair of teeth, and swollen out often to a great breadth from the edge of the jaw, their connection with the whole circumference of individual teeth, being in general quite dissolved leaving a gaping, flat honeycomb-like structure, in which these appeared as if loosely stuck, and which oozed out blood, more or less freely on the application of pressure. The patients were found either with decided emaciation or greatly swollen; and sometimes the arms and trunk might be observed covered with large folds of loose unhealthy skin, while the lower limbs were distended by swelling. In a few instances this tumidity was oedematous, but in general it was of a rocky hardness, the skin was indurated and thickened, every structure of the limb appearing as if impacted, and matted or glued together into a brawny solid mass. The skin was of various colours—sometimes of a scarlet red, more usually of a dark copper red, or of either a livid or a yellow, or of a

\* Dublin Med. Press, July 21, 1847.



yellowish livid hue; frequently also in the vicinity of variously sized blotches of these colours, brown coloured furunculi, small tumours containing only disorganized blood, rapia-like scabs concealing elevated tubercular ulcerations, the remains of former injuries having an acquired dark aspect, petechiæ, and, often, numerous small circular elevations or stigmata around the bulbs of the cutaneous hairs, of different shades of red, and accompanied by desquamation of the cuticle were observed. The joints and tendons, particularly those of the knees, were the most swollen, indurated, and painful localities. Sometimes the effusion was infiltrated into the cellular tissue around the joints only, and at others the articulations were occupied by it. In a few patients the periosteum covering the front of the tibia was elevated into an indurated, well-defined, and painful swelling, which was sometimes of several inches in extent, and constituted the most prominent symptom; but in the majority of the cases the greatest complaint was of the popliteal spaces and gastrocnemii muscles. The pain here was often very acute, accompanied by a sense of distressing distension on the patient assuming the erect position; and when the strength was such as to permit of walking, which was in many not the case, this exercise was in general rendered impossible by the pain; or, when this was relieved, by the matting together of the fibres, or the adherence to their sheaths of the tendons of the muscles of the legs.

The mind was sometimes depressed and enfeebled: in two cases there was maniacal excitement; in another, dementia and paralysis. *Tinnitus*, vertigo and deafness were occasionally complained of, as also various neuralgic pains, attacking the head, neck, or loins.

In regard to the circulatory system, the heart's sounds were usually short and snapping; sometimes they had a ringing, metalloïd character; often there was an obvious prolongation of the second sound, and on some occasions, the first sound was either much or quite extinguished. Sometimes there was a soft systolic murmur over the aortic valves, and just as often the diastole was marked by a harsh, rough, and grating noise, which in some instances was heard also in the larger arteries. In many cases there was a loud, humming bruit in the external jugular; sometimes even when the cardiac sounds were good, there were violent throbbing, and a loud whirring noise in both the carotid and subclavian arteries, while in others there was only a short blowing sound, annihilated often on the gentlest pressure of the stethoscope, to be heard in the vessels of the neck. The pulse varied from 60 to 144. It was always easily accelerated, and sometimes it was so weak, that it could not be numbered either at the wrist or inner ankle, and in such cases the systole of an artery even so near to the centre of the circulation as the femoral, was found to be appreciably behind the diastole of the heart. The larger arteries had in some individuals much of the visible impulsive throbbing, which appears to indicate in other circumstances, as in regurgitation through the aortic valves, a want of the due distension of their walls. The peripheral capillaries, also, everywhere, unless in the congested portions of the surface, were empty at least of red blood, and both this and the unusual action of the arteries might be seen at the same time with a comparatively shrunk, flattened state of the cutaneous veins. There was often in such, and in the exhausted patients generally, a disposition to syncope on their getting out of bed. The tract of the larger vessels of the limbs, and situations which were most dependent, or which were much exposed to pressure, were the most frequent seats of *ecchymosis*, and the nostrils and gums were the most constant sources of hemorrhages, which sometimes were both frequent and profuse.

There were no very marked symptoms affecting the respiratory system in Dr. Ritchie's cases, excepting in those in which hemoptysis took place.

In respect to the lesions of the digestive system, the tongue was commonly red or violet coloured, moist, and very clean; in other instances it was flabby and bloodless—sometimes it was tender, and in others again it was chapped and disposed to bleed. There was in general some pyalism, and the tongue was indented on its sides, and the swelling of the parotids and of the gums gave the patient the look precisely of a mercurialized person. The saliva was usually ascetic. There was often extreme thirst, the appetite was almost uniformly good, and it was not uncommon to see it voracious. The belly was at times enlarged, and either meteoric or obscurely fluctuant. The bowels in a large proportion were

slow, but in some individuals, who were exposed to cold and wet before admission, there was diarrhœa; in others this symptom arose after they had been put on a full stimulating diet, and in both of these the abdomen was not rarely found shrunk and flaccid. Sometimes the dejections were pale or nearly white; but in others they were of a bright orange colour, and attended by bilious vomiting. In the diarrhœas brought on by treatment, the stools passed rapidly into fermentation, and had in this respect, and in their general aspect, a strong resemblance to those of well-fed diabetic patients. In some the evacuations were incorporated with blood; many complained of piles, and then the blood lay more on the surface of the excretions.

The urine varied in specific gravity from 1010 to 1028. In a few instances it was reported to have been bloody: in one it was alkaline immediately on being voided, but in no one of the many specimens tested was it found to be albuminous or abnormal in other respects. There was retention in one case. Amenorrhœa took place simultaneously in one woman with the first symptoms of the disease.

In reviewing the causes of the epidemic as far as they could be ascertained, Dr. Ritchie likewise found a deficiency of potatoes and succulent vegetables to be the most efficient: cold and other debilitating agents operating only as predisposing or auxiliary causes.

The author notices several distinct phases of the disease. One variety was distinguished by anemia, emaciation, diarrhœa, bloody stools, and dropsy, while the more distinctive symptoms of scorbutus were wanting. A second group was characterized by anemia, often by diarrhœa, rapidity of the pulse, epigastric pain or oppression, great general distress, an uricated crimson efflorescence on the skin, petechiæ, and hemorrhages. A third by pains most commonly along the course of the nerves, but at others situated in a bed of muscle, as the gluteal; the cases having a close resemblance sometimes to general rheumatism. And, at others, to ischio nervosa, morbus coxarius, or disease of the knee-joint; their true nature being manifested by the sponginess of the gums, a perhaps slight ecchymosis only, the inefficiency of ordinary treatment, and the good effects of a full diet. And, lastly, the more ordinary form, in which affected gums and legs were the prominent symptoms. These subdivisions of the complaint had a conspicuous generic community with one another in their history, exciting cause, general aspects, and indications of treatment; but they appear to have arisen, each of them, under some distinctive combination of circumstances from which they had derived equally remarkable specialities.

The indications of treatment which the author pursued were, first to restore the general vigour and health consistently with the particular circumstances; and, second, to attempt the removal of the local complications, such as the hemorrhages and inflammations, on general principles, modified, of course, in every case by the character of the general health.

In the first form of the epidemic, the successful treatment of the cases was very hopeless. They were the product of long deprivation of adequate food and clothing, and not only resisted curative means, but were often injured by them. The most suitable diet was one of milk, with the addition of some light farinaceous substance, of one or two eggs daily, or a small quantity of wine. After a day or two's use of some such food, it was not uncommon to find fever kindled up; and, should a more stimulating diet have been employed, severe diarrhœa. The former effect was attempted to be removed by restricting the patients to weak tea, and toast, or panada; and the latter by varied remedies. When the diarrhœa was more simple, a couple of ounces of the dried root of the *tormentilla erecta* boiled slowly in two pints of milk and one of *aqua calcis* to a pint, was used daily. In similar cases the *infusum hamatoxyli* alone, or having the tormentilla added, was employed; and along with these as much even as three grains of the sulphate of iron every four hours, was given, with some aromatic, in a few instances with marked benefit; and in some other cases five or more grains of the sulphate of zinc three times daily, effected at least a diminution of the purging. In many patients with or without bloody stools, the sugar of lead, to the extent of about a scruple daily, was given for sometimes a couple of weeks continuously, without any bad effect or manifestation on the gums; and, in general, also with only

limited good effect. The various preparations of catechu, kino, and opium, were also used, but the latter sparingly, as stupor was induced by even small doses. In all the cases, the tendency to congestion of the organs was sought to be obviated by the use of flannel coverings, warm fomentations, hot mustard pediluvia, and on a few occasions by the short application of blisters to the abdomen. When acute hemiparesis, threatening, as was believed, some effusion on the brain, presented, blisters were used; when dullness on percussion, thoracic pain, or dyspnoea, seemed to indicate congestion in the lungs, dry, and in rare cases, moist-cupping and sinapisms were employed; and, when the most prominent symptom was dropsy without any bowel affection, very striking amendment ensued on recourse being had to stimulating diuretics, as gin and squill, with a nutritious diet, and bandages to the limbs and abdomen.

In regard to the treatment of the second form of the epidemic, or the more purely hemorrhagic febrile variety the author has little to say. He had three cases only under his own treatment which could be held to belong to this category.

In the rheumatic form the use of repeated blisters was sometimes necessary, with which were conjoined quinine, cod-liver oil, and a full animal and vegetable diet.

The fourth, or more ordinary form of the complaint, was treated by regulated diet, with lemon juice or citric acid, and constant fomentation of the affected limbs. The period of recovery varied from a fortnight to a month.\*

—Dr. Curran, who gives the history of scurvy as it appeared in Ireland, also recognises four principal groups, each offering certain distinctions.

In the first there was extreme pallor and anxiety of countenance, with dry and cool skin, injected or spongy gums, and alveolar margins marked with a blue line, as from the effects of lead. There were also nodular indurations in different parts of the muscular system, especially on the calves of the legs and back of the thighs. The patient complained of constant pains aggravated at night; epistaxis was frequent, the bowels and pulse being natural.

The second group differed from the above only in exhibiting large, yellowish red or black and blue discolorations of various sizes and in various spots, chiefly over the ankle-joints, calves of the legs, popliteal spaces, and patellæ.

In the third class the anxiety and pallor of the countenance were extreme. The integuments were flabby and oedematous, the gums spongy or bleeding, or rising as black fetid granulations above the level of the teeth. The extremities, and, to a less extent, the body also, were covered with petechial spots. Ecchymoses and patches of various hues also appeared on the front of the leg, ankle, ham, inside of the thigh, buttocks, knees, and abdomen. In some cases the joints were enlarged and fluctuating. In the advanced stages, dysentery and melæna not unfrequently occurred, the urine was high-coloured, and epistaxis was frequent.

The fourth group was chiefly distinguished by the preponderance of neuralgic pains in various parts in succession. In this group, also, the skin was dry, and the gums spongy and dark, but the breath was never fetid, and the pulse seldom accelerated.

Dr. Curran next analyses the particular symptoms of the disease seriatim.

1st. *State of the gums, &c.*—A diseased state of the gums was one of the most constant symptoms, being absent in four cases only. Sometimes the gums were found pale and bloodless. In two cases profuse salivation existed. The fetor of the breath was not constant.

2d. *Ecchymoses, petechiæ, &c.*—These phenomena were never observed on the head, and most commonly occupied the lower extremities. The most frequent appearance was that of a dark blue discoloration round the ankle joint. Ecchymosis sometimes appeared suddenly, preceded by pain. The discoloured portions of the integument were always of a higher temperature than the healthy parts.

3d. *Hæmorrhages.*—Epistaxis occurred in at least half Dr. Curran's cases; it was met with in all stages of the complaint. Hæmorrhage from the kidneys and bowels was rare, and was noticed only in old and debilitated subjects. Hæmorrhage from the lungs and stomach was never seen.

\* Edinb. Monthly Journal, July and August, 1847.



4th. *Pains* were observed in almost every case, and were increased upon the patient's assuming the erect posture. The most frequent locality of the pains was the calves of the legs, heels, and ankle-joints. The pain in the back so constantly noticed in Dr. Shapter's cases was scarcely ever met with.

5th. *Digestion*.—The digestive powers were, in the commencement, uninjured. The bowels natural; in advanced cases diarrhœa was present.

6th. *Circulation*.—Pulse feeble, *bruit de soufflet*, though carefully sought for, was only discovered in two instances.

The etiology of the disease forms the next subject of consideration. The author distinctly shows that in his patients want of milk could not have been the efficient cause, as it was used in considerable quantities at the time of seizure and for some time previously. The active causes he supposes to be humidity, inactivity, and, more especially, deficiency of succulent vegetables. He shows that in four-fifths of his cases, at least, the diet had been bread, with tea or coffee, and in no single instance could he discover that green vegetables or potatoes had formed part of their dietary.

The *diagnosis* of scurvy and purpura, the only disease with which it can be confounded, will be found among our extracts. (Art. 5.)

*Treatment*.—The beneficial influence of lemon-juice was most marked in Dr. Curran's cases. The quantity given was half an ounce three times a day. A good and cheap substitute for lemon-juice was found in nitrate of potash and vinegar. As a local application to the mouth, the nitrate of silver in substance, tinct. ferri sesquichloridi, solution of chloride of soda, and tincture of rhatany, were all used with good results, more particularly the latter.\*

The above communication, by Dr. Curran, is the last which we are called upon to notice as emanating from British writers. It remains to give a brief account of investigations upon the same subject by continental observers.†

—M. Fauvel has narrated the history of scurvy as it recently appeared at the Salpêtrière. The patients were all of an advanced age, the youngest being 69, the oldest upwards of 80. They had all been previously in good health and well fed. The symptoms and treatment were similar to those observed in this country. The most interesting portion of M. Fauvel's memoir undoubtedly consists in the analysis of the blood, which he details at some length, in accordance with the experiments of Becquerel and Rodier, and which distinctly prove the correctness of the investigations previously made by Mr. Busk, with respect to the quantity of the fibrin. On this point, however, we shall not dilate, as it will be more appropriately discussed in the Report on Pathological Chemistry. It will suffice in this place to mention that these analyses, if confirmed by further researches, must entirely subvert the predominant theories of scurvy, and the explanation of the symptoms upon the supposition of the existence of a dissolved state of blood; for, in fact, the blood, as has since likewise been ascertained by Andral, instead of exhibiting the dissolved state, coagulates firmly, and in no instance examined has the fibrine been deficient; but, on the contrary, in the excess. Though not immediately connected with the subject, it may also be mentioned that another fact elicited by the examination of scorbutic blood is that the albumen may be diminished to a great extent without the supervention of dropsy, thus opposing another theory of M. Andral.‡

—M. Marechal (de Calvi), in a communication to the Academy of Sciences, refuses to acknowledge the justice of the conclusions against the older theory derived from the excess of fibrine. He states that in most cases of scorbutus there is more or less local inflammation, to which this excess is due, and that this is especially the case when hemorrhagic infiltration takes place in internal organs, the extravasated blood exciting inflammation as a foreign body.§

In other communications contained in the French journals, an analogy of causa-

\* Dublin Quarterly Journal, Aug. 1847.

† After the above was written, we have seen a paper by Dr. Anderson, of Glasgow, in which he endeavours to reconcile the conflicting opinions respecting the etiology of scurvy. We can do no more, on the present occasion, than state that the communication may be found in the Edinb. Monthly Journal for September.

‡ Archives Générales, t. xiv. See also Prov. Journal, Oct. 6, p. 552.

§ Gazette Méd., No. 34.

tion and pathology between scorbutus and typhoid fever is sought to be established, but upon no satisfactory grounds. The question is decided in the negative by the difference in progress of the two diseases, and in their treatment: scorbutus being of indefinite duration, and cured almost to a certainty by lemon-juice; typhoid fever having a definite course, and being quite uninfluenced by that, if not by all other treatment.\*

### § II.—Zymotic Diseases.

2. *Fever, Typhoid*.—*Mercurial Treatment of*.—As long ago as the year 1812, M. Serres advanced the theory that the typhoid fever of his country was a true exanthema, and that the intestinal lesions of the fever bore to each other the same relations as the cutaneous eruption and the febrile disturbance in variola and other eruptive fevers. This idea, which he has subsequently reiterated at various times, has led him to the conclusion that the mercurial treatment might prove abortive of the typhoid disease, as it is seen to be of the variolous eruption, and accordingly, for the last three years, relied upon the internal and external use of mercury as the most efficient treatment.

The form of mercury used internally by M. Serres is the black sulphuret; externally the common mercurial ointment is employed. The dose of the former is from four to six grains, three or four times a day, and the treatment is continued until signs of approaching ptyalism show themselves, when it is abandoned. The conclusions which he draws from numerous observations are thus stated by M. Serres:—1. The fever and headache are evidently influenced by the second or third day of the treatment. 2. The pulse falls below the mean. 3. No ataxic effects have been witnessed. 4. The quantity of *Æthiop's* mineral required to produce these results has not exceeded 50 grains. 5. Slight ptyalism only was induced. 6. Convalescence was fairly established from the eighth to the thirteenth day.†

[The mercurial treatment of fever is no novelty in this country, but forms the staple of a large portion of the empirical physicians of the present day. If, however, any faith is to be placed in the chemico-pathological researches of later times, the exhibition of mercury to affect the system must be erroneous practice.]

3. *Measles*.—A pamphlet has been published by a military surgeon, M. Levy, on measles in the adult, from which we are led to the belief that the occurrence of this exanthema after puberty is a more common event than is generally supposed. The cases upon which he has constructed his memoir were witnessed in the Clinical Hospital of Metz, and were 120 in number, three of these only being under 18 years of age. The memoir, though elaborate, is without special interest.‡

4. *Erysipelas*.—*Separation of the entire Scalp from*.—In a case under the care of M. Velpeau, the entire pericranial cellular tissue became infiltrated with pus, as a consequence of phlegmonous erysipelas, and, in spite of repeated free incisions, nearly the whole scalp sphacelated. Unlike what might have been expected, there was very trifling exfoliation, and the surface soon granulated. The restored scalp is described as being wrinkled, as if too large for the head.§

### § III.—Diseases of the Nervous System.—

5. *Insanity*.—In a work recently published by Dr. Seymour, entitled "Thoughts on the Nature and Treatment of several Severe Diseases," the subject of mental derangement occupies a conspicuous place, chiefly in reference to the curability of certain forms of it by small and repeated doses of narcotics. The preparation preferred and generally used by the author is the acetate of morphine in solution, beginning with a quarter of a grain every night, increased after a week to half a grain, and steadily persisted in. The form of mental alienation in which the treatment is most beneficial is that of melancholia and suicidal mania, of both of which many successful cases are reported. It is also referred to as a valuable

\* Gazette Méd., No. 29.

† Ibid. Nos. 33, 34.

‡ Mémoire sur la Rougeole des Adultes, 8vo. Paris, 1847, p. 48.

§ Journ. de Méd. and de Chirurg., and Month. Journal, Sept.

recourse in puerperal mania, particularly when used in connection with the tepid bath.

Another point much insisted upon by Dr. Seymour is the connection between insanity and pulmonary disease, and he gives us to understand that in several cases, he had prognosticated such a termination from the obstinacy of the melancholic symptoms.

—In the last Report of the Commissioners of Lunacy much important information is accumulated respecting the treatment of insanity. The great injury which follows the use of the lancet in mania is almost universally allowed by the medical attendants of lunatic asylums, to whom the Commissioners referred for information. Local bleeding is also sparingly employed, but in moderation is considered very useful. Emetics are all but laid aside by the most scientific practitioners, or used only in small doses to obviate excitement. Purgatives are generally approved of.

Anodynes are now very extensively used, and with striking benefit; but some discrimination, however, is necessary in their employment. Baths are also well reported of, especially the tepid and douche.

In the treatment of melancholia there seems to be little difference of opinion. Most of the medical officers who answered the inquiries of the Commission agree in directing attention to the alimentary canal, and are of opinion that the cause of the disease is often to be sought in disturbances of the digestive organs. They all likewise urge the necessity of regulated exercise in the open air, cheerful society, &c.

Epilepsy connected with insanity is almost universally allowed to be incurable, as is also the general paralysis of the insane. In the latter Dr. Sutherland relies upon counter-irritation and mercury, and Dr. Fox upon electro-galvanism.

The Commissioners, in the conclusion of their Report, justly lay great stress upon the moral treatment of the insane.\*

6. *Use of Ether Inhalation in Mania.*—In the licensed lunatic wards of the Marylebone Infirmary, Dr. Boyd has tried the inhalation of sulphuric ether in four cases of mania, one chronic and three acute, with benefit. The tranquillizing effect was produced at various intervals of from two to ten minutes; at a time when the patients were unusually violent. They all appeared to become intoxicated, but before this effect was fully induced, their anger subsided. The ether was administered by means of a sponge.†

7. *Tetanus.*—A case of tetanus is reported by Mr. Chalmers, in which recovery is referred to the exhibition of ether, but it must be remembered that the symptoms were never very severe, and that the case differed from the ordinary course of the disease, especially in the length of time which elapsed between its threatened and real attack, and in the persistence of rigidity of the limbs three weeks after the spasms had ceased.‡

In another case, related by Mr. Bransby Cooper, in his Surgical Lectures, the spasms were evidently relieved by the ether, and much of the patient's misery thereby alleviated: but he died nevertheless.§

8. *Hysteria.*—In this disease, also, ether inhalation has been beneficially employed. Mr. Wilkinson reports a case in which hysteric symptoms were subdued by it after resisting every species of treatment for four days.||

9. *Cerebro-spinal Meningitis.*—An epidemic of a fatal malady, similar in all respects to the disease described by Dr. Darby, as it appeared in Ireland, and by M. Rilliet, as it occurred at Versailles (see Half-yearly Abstract, Vol. III., p. 151), has recently been witnessed in America, and described by several American physicians; among whom we may name Dr. White, of Whiteville, and Dr. Hicks, of Vicksburg. The latter writer states that the chief symptoms were muttering delirium, restlessness, and eventually frantic wildness, followed on the second or third day by symptoms of tetanus, the spinal muscles being strongly retracted, with loss of power in one or other side of the body, and violent spasms excited

\* Fourth Report of the Lunacy Commissioners, 1847. Noticed in Med.-Chirug. Rev., October.

† Lancet, Aug. 14.

§ Méd. Gaz., Aug. 6.

‡ Prov. Journal, June 30.

|| Lancet, July 3.



by touching the lower extremities. In many of the cases petechiæ of large size appeared on various parts of the body, within six hours of the attack. These declined on the fourth or fifth day, if the patient lived so long. The duration of the disease was from five to thirty days, the mortality fully one half. No treatment appeared to have any influence.\*

The same disease has likewise been recently committing great ravages in Algeria, more particularly among the Zouaves, a regiment much exposed to heat and fatigue. M. Bisseron, finding the inutility of ordinary treatment, was induced to try the inhalation of ether; by which means he affirms that he saved eight patients in succession.†

10. *Sciatica*.—This disease is well described in the last chapter of Dr. Seymour's work. A condensed statement of his views of its treatment appears among our Abstracts (art. 14).

#### § IV.—Diseases of the Respiratory System.

11. *Auscultation*.—*New Stethoscopic Sign*.—Dr. Cristophe professes to have discovered a new stethoscopic sign, intermediate between ægophony and bronchophony, and which, without much attention to physiological rules, he has christened "ægony." He says that for about fifteen years he has remarked, about a score of times, a resonance of voice intermediate in character between well-marked bronchophony and ægophony. It occurs as a trembling vibration of the voice, but short, feeble, and not prolonged, as in ægophony. One may form an idea of the sound by dividing that of ægophony into two parts, and by taking account only of the first part, by abstracting the second; that is to say, by omitting what constitutes the final characteristic tone (timbre) of the bleat of the goat, or of the voice of Punchinello. He has called this sign ægony, because it is a diminutive of ægophony, and that it may be considered as part of that sound. Ægony is characterized by a short vocal resonance, somewhat tremulous when monosyllables are articulated. This character is always the same, in whatever position the patient is placed; the sound does not change to ægophony, to revert again to ægony. It increases and diminishes, but insensibly, and that in a considerable interval. It may disappear upon cure; most often it remains a long time stationary; but when the patient is about to succumb, ægony is altered by the sounds which attend the breaking up of the tubercular matter.

This symptom has also its distinct pathological and anatomical significations. Ægony is always heard between the scapulæ, at their inner borders, and especially at the middle or upper third of the latter. The author has often found it stronger on one side than on the other, and more on the right than on the left side. It almost always coincides with a painful spot, as large as a shilling, situated at the upper third of the inner border of one or the other scapula, and especially of that which presents the ægony in the most marked degree. This painful point is fixed and permanent, or rather it is liable only to be suddenly altered by certain movements of the scapula and of the arm.

Ægony indicates an old-standing pleurisy, and also a latent but actual chronic pleurisy, such as sometimes precedes tubercular disease. It is always accompanied by thickening of the pleura, and by adhesions of the pleuræ, with strong bands and false membranes.

Examination after death has mostly revealed tubercular deposit in the corresponding part of the lungs which are indurated, and sometimes traversed by ramifications of the bronchi, deformed and flattened. On one occasion the stethoscope detected tubular respiration over a space the size of a shilling, and several times deep cavernous breathing was perceived, and almost always anophony. This last phenomenon is explained by the fixed and resisting opposition that the indurated lung offers to the vibrations of the voice of the auscultator, whilst the thickening and hardening of the pleura produce ægony by the tremulous resistance thence opposed to the bronchophonic vibrations of the patient.

The conclusions at which M. Cristophe arrives are—1st, when ægophony is present an effusion, either disseminated or collected, always exists; 2nd, in

\* Philadelphia Med. Exam., Aug., 1847.

† Gazette Méd., 26 Juin.

simple ægony such never exists. Thus the latter signifies a chronic, dry, and pseude-membranous pleurisy, accompanied generally by a subjacent induration.

Most of the subjects in whom the author has met with ægony were all affected by gastro-intestinal engorgements, subject to cold and shivering, and liable to get colds. He has also marked in them a pale and somewhat yellowish complexion, especially about the nose and lips, shrunken features, a dry cough, with sometimes the expectoration of whitish pellets of mucus, thick and shining.

These observations the author has made known, that their truth may be tested, and that their value in diagnosis may be verified.

Upon this specimen of auscultatory dilettanteism the editor of the "Lancet" observes:

"The stethoscopic sign which M. Christophe has made known seems to be, certainly, rather finely drawn. Every person who has attentively examined the chest in disease, must have often experienced some difficulty in distinguishing between bronchophony and ægophony, by meeting with sounds which might almost indifferently be referred to either; but we have hitherto heard of no one who has developed a new sound from these mid-sounds, and named it. Yet we may suppose some of them may be pretty constant in certain conditions, and characteristic of those conditions, as M. Christophe represents. Allowing the sound of ægony to be a distinct sign, our diagnosis must no longer be confined to noting bronchophony, in all its shades, from ægophony, but we must take this new sound, ægony, standing midway between the two, and distinguish it from either—a task, we believe, not very many will attempt, and one requiring nice ears and nice discrimination, and, withal, having no very direct bearing upon therapeutics.\*

12. *Larynx, Follicular Disease of.*—This term is applied by Dr. Green (Treatise on Diseases of the Air-passages, &c., New York, 1846) to a disease which has been but little studied in this country, although it is far from being of rare occurrence. It appears to have first attracted attention in the United States as a sequel to influenza, and attacked principally those who were in the habit of using their voice in public speaking, and hence was frequently observed among the clergy, and acquired the name of Clergyman's Sore Throat.

The disease, at its onset, consists in subacute inflammation of the mucous follicles of the fauces, and is then limited to the pharyngeal membrane. It soon, however, spreads to the larynx, and may even reach the trachea. It is described by Dr. Green as very insidious in its progress, and is characterized, in the first instance, by frequent inclination to swallow, as if an obstacle existed in the upper part of the œsophagus: at the same time a slight alteration is perceived in the tone of voice, with hoarseness, much increased after speaking. Sometimes there is slight soreness of the larynx, but seldom any cough. If the throat be inspected at this time, the pharyngeal mucous membrane will appear to be deprived of its epithelium, and the mucous follicles will be seen to be hypertrophied, and in long-standing cases are filled with a matter resembling softened tubercle. At a still later period, when the glands situated at the root of the epiglottis and those of the laryngeal membrane become involved, all the above symptoms are greatly aggravated. The voice becomes more feeble and hoarse, and when the follicles contained in the mucous membrane which covers the vocal cords are invaded, is almost or entirely extinguished.

It is important to remember that the disease may arrive at this degree without giving rise to any symptom which is directly referred to the throat; the patient may have a teasing cough, and his breathing may be short, but he will not complain of the larynx. In some cases the disease closely resembles tubercular phthisis, of which the author relates a striking example; and in others it so far complicates that disease as to form an important element in its pathology. In this case the cough, dyspnoea, and other symptoms of phthisis are greatly aggravated, and the disease more quickly passes through its different phases than when follicular disease is absent. Dr. Green mentions one case of phthisis in particular, in which his treatment of the follicular disease tended materially to check the other.

\* Gazette Méd., 21 Août.

We shall not follow the author through his remarks upon the causes of the follicular disease, but proceed at once to the treatment, which comprises the most, though not entirely original, part of the book. The practice for which Dr. Green has gained the greatest notoriety, and not a little abuse among his own countrymen, consists in the application of a strong solution of nitrate of silver to the interior of the larynx, the base of the epiglottis, or what other portion of the laryngo-pharyngeal membrane may be implicated. The method of applying this solution, which is of the strength of from two to four scruples of the nitrate to the ounce of water, is by means of a globular piece of sponge, the size of a small cherry, fixed to the end of a curved whalebone like a probang. With this the aperture of the glottis is passed, but only after some manipulation, accustoming the part to the contact of the instrument by applying the solution to the outside of the rima glottidis for several days in succession. In this way, Dr. Green affirms that the exquisite sensibility of the glottis is overcome, and the instrument may then be passed through the glottis without difficulty. The use of the solution is to be continued some time, to guard against a relapse.

13. *Acute Laryngitis*.—Dr. Green also applies the solution of nitrate of silver in the acute diseases of the larynx, and mentions a case in which, although suffocation was imminent, it was followed by marked success. A large quantity of viscid mucus was discharged, and the patient speedily recovered.

14. *Phthisis Pulmonalis*.—We have already incidentally alluded to the mitigation which the symptoms of phthisis received by attention to the follicular disease of the larynx and pharynx, with which it is frequently associated. The same subject is more fully discussed by Dr. Green, in a subsequent part of his work, and the value of the treatment is urged upon the evidence afforded by twenty-five cases; one of which we transcribe:

"A gentleman, some months before coming to New York, lost his voice entirely, and had a cough, and was hoarse several years previously. He had also had several attacks of hemoptysis; was emaciated, and so feeble when he arrived that he could not walk without aid. He was suffering from severe cough, had great dyspnoea, and free expectoration of purulent matter. The throat was studded with granulations or enlarged follicles. A dulness on percussion over the right lung, with absence of respiratory murmur, with the above rational symptoms marked the case as one of confirmed phthisis, and such it was admitted to be by several experienced auscultators."

"Applications of a concentrated solution of the nitrate were made to the throat and into the larynx for about two weeks. At the end of this time his cough and dyspnoea were so much relieved, and his strength increased, that from not being able to walk any distance without aid, he on the twelfth day of treatment went a distance of three miles without inconvenience." This patient subsequently left New York, and was in a favourable condition a year afterwards.

15. *Cod-liver Oil in Phthisis*.—The beneficial effects of this animal oil in consumption, though undoubted in certain cases, appear to be but little known to the generality of the profession in this country. That it is capable of effecting more good than any other medicine with which we are acquainted we have convinced ourselves by a considerable experience, which it is our intention at some period to notice more at length. In the meantime we are able to give the testimony of Dr. Madden, of Torquay, which appears in a paper recently published by him, "On some Points connected with Tubercle of the Lungs." He states that his experience of cod-liver oil in phthisis is extremely favourable; he has witnessed a steady improvement under its use, the cough becoming less troublesome, and the expectoration less copious; the emaciation being arrested, and even, in many cases, a decided amount of flesh being gained. A few cases are related in support of these assertions; but it is to be regretted that they lose a portion of their value from a want of precise stethoscopic information.\*

16. *Gangrene of the Lung*.—A case is related by M. Leuret, in one of the French journals, which shows that the fetor of the breath, which is so diagnostic of the disease, is sometimes absent altogether, or is only to be perceived when the patient coughs after taking a longer breath than usual. The patient alluded to was a

\* Med. Gazette, Sept. 17, 1847.



lunatic, a class of patients in whom it is well known that the most serious disease may be so masked as entirely to escape observation during life. In the present case the fact of the destructive inflammation existing in the lungs would have been quite overlooked but for the accident of the patient coughing in the face of the physician. After death a large gangrenous abscess was found in the lower lobe of the right lung.\*

#### § V.—*Diseases of the Circulatory System.*

17. *Aortitis*.—In the elaborate work of Mr. Crisp on the Diseases and Injuries of Blood-vessels,† inflammation of the aorta forms the subject of the third chapter. The author admits the uncertainty which surrounds the diagnosis of the affection, and seems disposed to consider that there are no undoubted signs by which it can be ascertained. This difficulty chiefly arises from the frequency with which aortitis is associated with affections of the heart itself, and the fact that its symptoms are therefore merged in the more urgent phenomena of the latter disease. The only morbid appearances which the author considers as indicative of inflammation of the aorta are redness and a pulpy appearance of the internal and middle tunics, with a facility in detaching the serous membrane. The treatment recommended is vigorously antiphlogistic.

In connection with acute aortitis, the author alludes to a contracted state of the aorta, which has been described by Dr. Craigie as taking place at the time of the closure of the ductus arteriosus. A table of seventeen cases of this appearance is given, displaying the curious fact that many of the individuals suffered but little inconvenience from the abnormal condition of the vessel.

In discussing the important subject of inflammation of the arteries of the extremities, the author proves satisfactorily that it is the immediate cause of senile gangrene, and supports his opinion by the detail of numerous cases. This matter, however, we are compelled to pass by, as more directly appertaining to our Report on Surgery.

18. *Aortic Valves, Diseases of*.—The following are the chief morbid alterations of these valves which Mr. Crisp has met with in his own practice and in the examination of museums:

1st. Acute inflammation, shown by redness and deposit of soft lymph; generally coincident with endocarditis.

2d. Thickening and inflammatory adhesions, by which two or more valves are agglutinated.

3d. Cartilaginous, atheromatous, calcareous, and osseous deposits.

4th. Vegetations, sometimes solitary, more frequently in masses.

5th. Retroversion and inversion of the borders.

6th. Enlargements and dilatations.

7th. Ruptures and perforations.

8th. Partial dilatation; this very rare.

Most if not all these varied lesions are rightly attributed to the effects of acute or chronic inflammation. In his account of the symptoms of disease of the aortic valves, Mr. Crisp merely follows the description of previous writers.

A fact mentioned by the author, which is worthy of remembrance, is that persons with only a trifling amount of disease of these valves may die suddenly after a full meal. This he explains by the pressure of the full stomach upon the descending aorta, and consequent interference with the circulation. Three cases are given in illustration of this event; and two others, which point out the danger of administering digitalis under similar circumstances.

19. *Internal Aneurism*.—The chapter on aneurism, by Mr. Crisp, is a very complete disquisition on the subject. We give below extracts of the most interesting matter which it contains.

*Situation*.—Of 243 cases of internal aneurism, 175 were of the thoracic aorta, 59 in the abdominal portion of the vessel, 2 in the pulmonary artery, and 7 in the cerebral. Of these, 198 were males, 45 females.

\* Gazette Méd., 4 Sept. 1847.

† Treatise on the Structure, Diseases, and Injuries of the Blood-vessels, Lond. 8vo, 1847.

*Age.*—Between ten and twenty, 3; twenty and thirty, 23; thirty and forty, 82; forty and fifty, 62; fifty and sixty, 33; sixty and seventy, 13; seventy and eighty, 4; eighty and ninety, 1; not stated, 22.

20. *Thoracic Aneurism*.—*Symptoms and Diagnosis.*—Mr. Crisp speaks of the great obscurity of the signs of thoracic aneurism. These depend on the situation, size, and pressure of the tumour on surrounding parts, and upon the condition of the heart. When seated in the ascending aorta, the pulsation is heard on the right side of the sternum, and the tumour mostly projects in that situation. When situated in the arch, and ascending, various parts may be pressed upon, as the lungs, trachea, bronchi, recurrent laryngeal nerves, &c., producing the various symptoms of dyspnoea, orthopnoea, hemoptysis, loss of voice, &c. It may press on the œsophagus, causing dysphagia: on the vena cava and thoracic duct, producing engorgement of the pylorus; and, in the latter case, emaciation. Symptoms of indigestion are also present, and vague pains, which are not uncommonly mistaken for rheumatism. The character of the pulse varies according to the situation of the aneurism: if in the innominate or subclavian, the pulse of the affected side will be less distinct, and in some cases absent. Mr. Hodgson states that the pulse is often irregular; this Mr. Crisp denies, and when it is so he believes there is some coincident disease of the aortic valves. (Compare Abstract, Vol. I. p. 49; Vol. III. p. 49.)

*Physical signs.*—The physical signs of aneurism of the thoracic aorta are stated to be dulness on percussion, bellows-sound, single and double pulsation, diastolic murmur, purring tremors, wheezing respiration, &c., in various combinations; but these the author justly considers as inconclusive, since they are also to be met with in other states of the vessel or of the heart. The double sound which is mentioned by Gendrin and others is not to be depended upon, Mr. Crisp having met with it only once in ten instances of aneurism of the thoracic aorta. The author does not omit to state the important fact, that large aneurisms may exist without any abnormal bruit. Two such we have recorded in a former volume (Vol. III. p. 160).

*Terminations.*—The terminations of aneurism of the thoracic aorta are thus stated by Mr. Crisp, from an analysis of an extensive series of tables.

*Ascending aorta.*—Of 98 cases, 30 opened into the pericardium, 6 externally, 4 into the left pleura, 1 into the right, 3 into the pulmonary artery, 3 into the right lung, 3 into the superior cava, 2 into the œsophagus, 2 into the right auricle, 2 into the right ventricle, 1 into the left, and one into the trachea; 7 died from pressure on the trachea and right bronchus, 6 from effusion into the pericardium and pleura, 2 from phthisis, 2 from syncope, and 1 from each of the following causes: regurgitation into the ventricle, compression of the vena cava, compression of the pulmonary artery, apoplexy of the lung, pericarditis, hemoptysis, and bronchitis; 4 died suddenly from unknown causes, and in 8 the cause of death was doubtful.

*Arch.*—In 48 cases of aneurism of the arch, 4 opened into the trachea, 2 into the pericardium, 2 into the œsophagus, 2 into the posterior mediastinum, 4 into the pleura, 2 into the bronchi, 1 into the pulmonary artery, 1 into the lung, 1 into the superior cava, and 1 externally: 12 died from pressure on the trachea, &c., 3 from suffocation, 2 from hydrothorax, and 1 from each of the following: pressure on the recurrent nerve, dysentery, apoplexy, rupture of ascending aorta; in 6 the cause of death unknown.

*Descending aorta.*—Of 21 cases, 8 opened into the pleura, 5 into the œsophagus, 2 into the left bronchus, 1 into the left lung, 2 died from pressure on the trachea and bronchi, 1 from apoplexy, and 1 from exhaustion.

*Treatment.*—Mr. Crisp advises small bleedings at regular intervals; but disapproves of digitalis. Belladonna and opiate plasters are useful.

21.—*Aneurism of the abdominal aorta.*—The diagnosis of this form of aneurism is thus laid down by Mr. Crisp. In abdominal aneurism, pain of an aching or tearing character is often felt. In abdominal pulsation, pain is seldom complained of. The sound in aneurism is generally a rough single bruit. In aortic pulsation there is seldom an abnormal sound. In abdominal aneurism the impulse is heaving and confined; in pulsation bounding and diffused. The age, sex, and circumstances of the patient will afford collateral evidence.

22. *Rigidity of the Arch of the Aorta.*—Dr. Bellingham calls attention to a condition of the arch of the aorta, which he states to be often mistaken for regurgitant disease of the aortic valves. This condition consists in rigidity and inelasticity of the walls of the vessel, with or without dilatation. His views with regard to the production of dilatation of the aorta are to the effect, that it is due to the regurgitation of the blood from the carotid arteries into the inelastic vessel, and not, as is commonly supposed, to the distending force of the left ventricle. The paper, which is one of much interest, terminates as follows:

1. Under certain circumstances the blood regurgitates into the arch of the aorta from the carotid and subclavian arteries, during the diastole of the ventricles.
2. Regurgitation into the arch of the aorta occurs whenever the coats of this vessel have become rigid and inelastic from previous disease.
3. That regurgitation into the arch of the aorta from the carotid and subclavian arteries is capable of developing a sound which has a great resemblance to the second sound of the heart, and is audible at the same period of the heart's action.
4. That a rigid and inelastic condition of the coats of the vessel, combined with roughness of the interior of the vessel, and slight increase of its calibre, is characterized by certain well-marked physical signs, which will enable it in the majority of cases to be readily diagnosed.
5. That the physical signs of this morbid condition of the arch of the aorta resemble those of valvular disease, and have probably often been mistaken for it.
6. That the form of valvular disease with which it is most liable to be confounded is a state of the semilunar valves of the aorta permitting regurgitation, which it resembles in a murmur accompanying the second sound of the heart, in the jarring pulse, and in the visible pulsation in the arteries; symptoms which heretofore were supposed to be pathognomonic of regurgitations through the aortic orifice.
7. That the morbid deposits which occur in the arch of the aorta are not the result of inflammatory action either of an acute or chronic character; neither can they be considered as the result of the natural degeneration which the tissues undergo in advanced life, but that they ought to be ranked among adventitious deposits.
8. That dilatation of the arch of the aorta is more frequently the result of regurgitation into this vessel from the large branches which come off from it than of the increased force with which the blood is propelled by the left ventricle, or than of any impediment to its passage through the remote or terminal branches of the aorta.
9. That our knowledge of the fact that regurgitation into the arch of the aorta occurs in cases where this vessel has become inelastic from disease, enables us to explain the cause of the *second sound* heard in cases of *aneurism of the arch of the aorta*, and to account for the second impulse felt where the aneurism forms a tumour externally.\*

23. *Coronary Arteries—Dilatation and Rupture of.*—Pathologists have investigated with great minuteness the various lesions to which the different parts of the heart are subject; but the diseases of the coronary arteries alone have not met with that attention which the importance of those vessels as the nutritive vessels of the central organ of the circulation demands. M. Aran, whose researches in connection with the cardiac affections we have previously had occasion to notice, has recently endeavoured to supply this deficiency in a paper published in the "*Archives G n rales*" (Juin 1847). He accounts for the slight importance which has been attributed to the diseases of the coronary vessels to the circumstance of their being generally associated with serious and extensive structural lesion of the heart, which have attracted attention, and to the exclusion of the former, and justly so in most instances, as they are secondary to the other and more severe lesions. There are, however, he observes, two pathological conditions of the coronary arteries, viz. dilatation and rupture, which in their isolated state offer materials for interesting consideration, as they may be the only cause of sudden death, and moreover offer a ready explanation of certain cases of rupture of the parietes of the heart itself. The author first alludes to

*Dilatation and Rupture of the Coronary Arteries.*—It would be imagined, from the small number of cases on record, that rupture of the coronary arteries is not a frequent event; but M. Aran regards the infrequency as more apparent than real, and thinks that many cases may have been overlooked either from the small size of



the dilatation, or, as has been before stated, from the preponderance of other cardiac lesions. In the instances which he has accumulated there were no symptoms to indicate prior disease; death was sudden, and the pericardium was found distended with blood.

*Dilatation—Rupture of the Cardiac Veins* is considered a still more uncommon lesion. The only instance which the author considers to be trustworthy is one recently recorded by Dr. M'Lagan (Abstract, Vol. II. p. 172), and this is not a case of primary rupture of the vessel, as takes place in varix, but was an accidental laceration, coincident with rupture of the muscular fibres of the ventricle. The case alluded to is not without parallel, as may be seen by reference to our Second Volume at the page indicated.

#### § VI.—*Diseases of the Chylopoietic System.*

24. *Diseases of the Œsophagus.*—Mr. Worthington has recently met with a case of "sacculated dilatation of the Œsophagus with stricture," which is of sufficiently rare occurrence. The patient, a gentleman æt. 69. had experienced slight dysphagia for three years, without material impairment of his general health. In January 1846 this symptom increased, and a stricture was discovered by the probang, opposite the cricoid cartilage. After death a pouch or bag was discovered proceeding from behind the Œsophagus and passing down in front of the vertebræ. Two-thirds of this dilatation were invested with muscular fibres proceeding from the constriction of the pharynx. The entire pharynx was much dilated. The stricture was composed of hypertrophied mucous and cellular tissue, and scarcely admitted a common-sized bougie. The author considers that early treatment by graduated bougies would in all probability have averted the fatal result.\*

25. *Diseases of the Stomach.*—The diseases of the stomach in general have during the past six months attracted some attention, having been chosen as the subject of the Croonian lectures by Dr. Budd;† they are likewise treated of, though in somewhat a desultory manner, by Dr. Seymour, in his work before quoted.‡ With these exceptions, however, the communications under this section are neither numerous nor important.

Of the lectures above mentioned by Dr. Budd, one of the most important and elaborate is that on chronic ulcer of the stomach, a condensed abstract of which we have printed in a former part of this Volume (art. 27). The lecturer also gives a complete history of the post-mortem softening of the viscus, the details of which are greatly enriched by the results of original investigations.

—Dr. Seymour, in his chapter on diseases of the stomach, thinks it preferable to descant upon individual symptoms, as something tangible and obvious, rather than to occupy the reader with a pathological dissertation properly so called. Upon this principle he first notices a symptom which occupies a permanent place in most diseases of the stomach, viz.—

*Pain.*—This symptom, he remarks, may arise from a great variety of causes, as for instance, distension with food. But it also occurs irrespective of this cause, under two forms, one, pain accompanied by heartburn, the other, pain alone. The first, Dr. Seymour believes to be excited by the presence of acid, and is readily removed by alkalies, combined with rhubarb and calumba. The other is best treated by a combination of bismuth and magnesia. If in such cases the bowels are confined, mercurial alteratives, followed by saline aperients, are recommended. When the pain resists this treatment, and from its obstinacy gives rise to a suspicion of organic disease, Dr. Seymour places much reliance on grain doses of opium twice or thrice daily.

Pain in the stomach, accompanied by pyrosis, is treated by Dr. Seymour by the pulv. kino c. in five-grain doses, and aloetic purgatives. A blister is sometimes premised.

Pain in the stomach is next considered as connected with chronic ulcer, of which fatal disease an accurate account is given: but nothing is mentioned which may not be found in Dr. Budd's lecture above mentioned (art. 27).

*Vomiting.*—The simplest form of vomiting described by Dr. Seymour, is that

\* Prov. Med. and Surg. Journal, July 28, 1847.

† Med. Gaz.

‡ Thoughts on Severe Diseases, Lond. 1847.

which occurs in pregnancy, and which is occasionally so severe as to threaten life. A case of this kind is narrated, in which the symptom was at length subdued by opium. Vomiting is also alluded to as symptomatic of cerebral disease, and as it occurs in hysteria, and as one of the accompaniments of rapid phthisis. In this latter disease, the author regards vomiting after coughing as symptomatic of "large quantities of matter locked up in the lungs."

Stercoraceous vomiting unconnected with hernia, or other intestinal obstruction, is occasionally witnessed, and Dr. Seymour notices three cases, one of which he reports at length. In this the vomiting, which had nearly exhausted the patient, was subdued by forcing the patient to swallow soda-water on every attempt to reject the contents of the stomach.

Vomiting of a peculiar dark green fluid is noticed by Dr. Seymour, as indicative of tubercular disease of the peritoneum. A rare kind of vomiting is also mentioned as depending upon contraction of the pyloric orifice; it occurs every two or three days, and the entire quantity of food taken in that time, is returned.

The last varieties of vomiting described are those symptomatic of renal calculus, and of the English and Asiatic cholera. In the English cholera, the symptom is generally suspended by two or three doses of calomel and opium.

26. *Peritonitis*.—A case in which the purulent effusion of peritonitis was spontaneously evacuated by an opening in the abdominal walls, is related by Dr. Aldis. The patient was a child, *æt.* 7.\*

27. *Intestinal Concretions*.—The following instructive case is recorded by Mr. Spry:—A young woman, aged 16, voided, with great pain, two large lumps of matter, the size of a pullet's egg, having a thin albuminous coating, by which their composition was concealed. After careful washing, these lumps proved to be masses of dyed wool of different colours, hair, worsted, cotton and linen rags, all compactly matted together. No information could be obtained which threw any light upon the manner in which these matters were admitted into the bowels; the only supposition was, that she swallowed them when a child. Previous to the expulsion of these substances the girl had been reduced to the last degree of emaciation, and exhibited a well-defined tumour just below the margin of the right ribs. As soon as the foreign matter above mentioned was expelled this tumour subsided, and the patient rapidly gained health and strength.†

—The "Monthly Journal" (September) contains a short paper "On some peculiar Intestinal Concretions," by Schlossberger, which is without particular interest.

#### § VII.—*Diseases of Variable or Uncertain Seat.*

28. *Gout*.—Dr. Seymour devotes the second chapter of his volume above mentioned to this subject. After a historical account of the disease, with some brief remarks upon its hereditary nature, he illustrates the three varieties, misplaced or irregular, atonic, and retrocedent gout, by appropriate examples. In respect of the treatment of gout, he observes that the modern practice differs but little from that of former days. He objects to blood-letting, which is in vogue among the French, as tending to prolong the paroxysm. Of colchicum the author entertains a high opinion, especially when given in small doses during the interval. One of the worst cases which he had ever witnessed was cured by the persistence in the dose of  $\text{xv}\text{m}$  every night for a twelvemonth. The preparations preferred by him are the wine of the root and the acetous extract.

In general, he further observes, he begins by a scruple of the wine of the root twice a day, and he also gives at night three grains of the acetous extract, with five of Dover's powder. If the bowels are confined he combines an aperient, as the extract of colocynth, instead of the powder.

In cases of old-standing gout, without hereditary taint, Dr. Seymour advises that the colchicum should be only given at night, combined with an opiate, and from fifteen to twenty drops of the liq. ant. potass tart., if febrile symptoms run high.

Dr. Seymour speaks well of the burdock (*Arcticum lappa*.) given in the form of decoction ( $\frac{3}{4}$ ij of the root to Oiss water).

\* Edinb. Med. and Surg. Journal, Oct., 1847.

† Prov. Med. and Surg. Journal, Sept. 8, 1847.

With respect to local applications in gout, Dr. Seymour enters into somewhat minute details, commencing with the "bootkins" of much celebrity, the valuable effects of which he satisfactorily accounts for by the fact that they confine the insensible perspiration, and therefore act as a poultice; they are applicable only to early gout, and, on the contrary, when the disease is of old date may greatly aggravate the pain.

Another subject upon which the author briefly touches is that of gouty concretions or "chalk-stones," as they are termed by the patient. For this symptom he has availed himself of the suggestion of Dr. Ure, and exhibited the benzoate of ammonia. The effect has been, he thinks, to arrest the depositions in their early stages.

29. *Diabetes*.—In our abstracts (arts. 34, 35) we have already noticed the most practical portions of two recent essays on this disease, one by Dr. Elam,\* the other by Dr. Rees;† we shall, in this place, briefly relate the views of each author on the pathology of the disease.

The source of the sugar, which is always justly regarded as the main question connected with the disease, is thus discussed by Dr. Elam.

In the natural state of the stomach after food, a certain quantity of fluid is secreted, of which the essential elements are a certain quantity of free acid, and a substance called pepsin. The two combined constitute the gastric juice. As long as these elements remain in due proportion, assimilation takes place, the azotized elements remaining as protein compounds, while, under the influence of the pepsin, the non-azotized elements are converted partly into fatty matter, and partly into lactic acid. For instance, the formula for starch  $C_{12}H_{10}O_{10}$ , that for lactic acid  $C_6H_5O_5$ , so that one atom of starch is resolved into two of acid. This, according to the author, is the general destination of the farina of the food. The lactic acid when formed unites with the free soda, forming lactate of soda, which is a natural constituent of the chyle.

In diabetes, an irritable state of stomach exists with exaggerated secretion of acid; and the author next inquires what would be the effect of this acid upon starch and cane-sugar, taking these as the types of the non-azotized elements of the food. This effect he states to be their conversion by the fixation of the elements of water into grape-sugar ( $C_{12}H_{22}O_{14}$ ). The change into lactic acid being prevented in the stomach as in the laboratory, by the presence of free acid.

It seems probable, according to the author, that the proximate cause of the disease consists in the disordered state of the gastric mucous membrane, leading to excess of acid secretions. This acts by converting the non-azotized elements of the food into grape-sugar. This theory he believes to be strengthened by the effects of treatment, the most efficacious being such as subdues the morbid irritability of the stomach. (See art. 35.)

—The theory supported by Dr. Rees, respecting the origin of diabetic sugar, is somewhat different. His belief is, that during health the conversion of starchy matters into grape-sugar is prevented by the presence of some principle, the effect of which is to cause their conversion into a substance intermediate between starch and sugar, to which the term *dextrine* has been applied. This conversion is effected, according to Mialhe, by a peculiar principle of the saliva, to which he gives the name of animal diastase, and it therefore appears that the saliva plays no inconsiderable part in the process of healthy assimilation. It is probable that the diseased action of diabetes consists in the absence of some principle in the saliva or stomach which corrects the action of the diastase, and prevents its producing a farther change of the dextrine into sugar. Whether this correcting principle resides in the gastric juice is not to be decided; but it is certain, not only that sugar is rapidly destroyed in the stomach during healthy digestion if introduced as sugar, but, moreover, that starch, after becoming dextrine, is finally converted into fatty matter instead of grape-sugar. (For Dr. Rees's views of treatment of diabetes, see art. 34.)

\* On some points connected with the History, &c., of Diabetes, Med. Gaz., Sept., 1847.

† Op. cit. pp. 70-144.



§ VIII.—*Diseases of the Urinary System.*

30. *Clinical Examination of the Urine.*—We have the opportunity of calling the attention of our readers to a small work recently published by Mr. Marckwick, intended as a Manual for the use of students in Urinary Diseases.\* It is strictly a compilation, and extracts largely from Dr. Golding Bird, Prout, Simons, and others, but more especially from the former.

The author must be admitted to have attained his object in presenting a convenient bedside companion; but it is one which will certainly suffer by a comparison with Dr. Bird's excellent treatise on the same subject. Its merits will be examined more in detail in our next chemical report, to which its contents more particularly belong.

31. *Morbus Brightii.*—The "Medical Gazette" of August contains a clinical lecture on this disease by Dr. Rees, but as it is but a repetition of the ideas previously expressed by that gentleman, (Abstract, Vol. II. p. 70, &c.,) we need not here give an analysis of its contents.

32. *Induction of Cystitis and Albuminuria by Blisters.*—M. Morel Lavallée has called attention to the effects of blisters upon the bladder. He describes the disease produced as "cystite cantharidien," and states that it is indicated by the presence of albumen in the urine, but in larger quantity than in Bright's disease. The albumen, he also states, may exist under three modifications:—1st, in solution; 2d, as a deposit at the bottom of the bladder; 3d, in the form of false membranes. There are no other symptoms of material consequence.†

M. Bouillaud has noticed the same thing as a consequence of blisters, and M. Vernois, who had experimented on the subject in consequence of M. Morel's communication, affirms, that in 26 men free from Bright's disease in whom blisters were applied, albumen appeared in the urine of 16.‡

§ IX.—*Diseases of the Skin.*

33. *Arsenic in inveterate Skin Diseases.*—We have at various times in our former volumes, had occasion to notice communications on the therapeutic influence of arsenic, by Mr. Hunt, whose name is favourably known to the profession for the assiduity with which he has studied this particular class of diseases. At the suggestion of various friends and correspondents, Mr. Hunt has been induced to give his views in greater detail in the form of a separate work,§ the contents of which we shall endeavour briefly to analyze.

The author's object in the volume in question, is not so much to present a general treatise on skin diseases, as to point out a successful method of managing those which usually baffle the efforts of medicine. With this intent, he lays aside at once all minute no-ological discoveries, and places the diseases which he wishes to descant upon all in one class, marked by one principal feature, that of intractability. In this prominent feature are merged the ordinary subdivisions of papule, vesicle, scale, &c.

In order more distinctly to detach these cutaneous affections from their respective nosological position, he distinguishes them by certain negative characters, under which he is enabled to exclude many varieties, and to retain only those which tend to intractability. Thus, the diseases in question—

1st. Are not of limited duration, but may afflict a whole lifetime. This excludes at once nearly the whole class of the exanthemata.

2d. They are not necessarily connected with or symptomatic of other disorders. We here exclude strophulus, aphthæ, phymæ, and syphilitic eruptions.

3d. They neither originate in, nor are protracted by local causes. Scabies, porrigo, and certain local forms of psoriasis, pityriasis, prurigo, eczema, and impetigo are thus excluded.

\* Guide to the Examination of the Urine, &c., 12mo., 1847.

† Revue Méd., June 1847.

‡ Archives Générales, Juillet 1847.

§ Practical Observations on the Pathology and Treatment of certain Skin Diseases generally pronounced intractable. Lond., Svo. 1847.

4th. They are not specially allied to debility; this puts aside pemphigus, pomphylus, rupia, and some varieties of purpura and ecthyma.

We have thus the subject much narrowed, and the intractable class therefore includes certain varieties of lichen, lepra, psoriasis, impetigo, eczema, and ecthyma, chronic urticaria, acne, syccosis, lupus, and rare congenital nævus. Having thus pointed out the diseases which he considers to be matter of present discussion, the author proceeds to speak of their diagnosis.

In the diagnosis he states that the most important point to be ascertained is whether they are or are not of syphilitic origin. This point being decided in the negative, we have next to ascertain whether the eruption be complicated with any other deviation from health, local or constitutional, and especially whether a febrile state co-exists.

The diagnosis being made out, the treatment is first to be regulated upon general principles. These it is not necessary to detail, as they are familiar to every educated practitioner; but we may premise that the author's remarks in connection with these are well worthy attention. He particularly mentions the very common error of beginning a system of alternative treatment too soon as one of the principal elements of failure, and in this we are sure he is strictly correct; it has often occurred to us to witness the failure of arsenic, cantharides, iodine, &c., simply for the reason that the case required antiphlogistic treatment in the first instance. It is, however, with reference to the exhibition of arsenic that our author's remarks are chiefly valuable.

The numerous failures of this medicine in the treatment of cutaneous diseases the author believes to depend upon five causes: 1st, the syphilitic character of the eruption is often overlooked, and arsenic is given when mercury is wanted; 2d, it is given in the inflammatory or febrile state of the eruption, when it never does good, but sometimes harm; 3d, it is often given on an empty stomach, and the irritation thus induced becomes a bar to its exhibition; 4th, it is given in doses too large, and at intervals too distant; 5th, it is generally given in *increasing* doses—this the author regards as a fundamental error, and is indeed the groundwork and end of his remarks.

The proper mode of exhibiting arsenic may be inferred from its therapeutical properties; and as these are imperfectly understood, the author endeavours to place them in such a light as shall seem to justify his inference.

Arsenic, in the first place, is a cumulative poison, and must, therefore, be used as other cumulative poisons are; that is, as soon as its specific effects are produced, the dose must be *decreased*. This is, as we have said, contrary to ordinary practice.

2d. The disease for which it is given is sometimes suddenly brought to a standstill as soon as the specific effects are manifested: in which respect arsenic resembles mercury. As soon, then, as the conjunctiva becomes irritable, the dose may be reduced. Mr. Hunt strongly urges the necessity of watching this symptom, as it generally precedes the gastric derangement produced by the medicine, and becomes, therefore, a good index of the extent to which it can be safely carried.

Another property of arsenic mentioned by Mr. Hunt is, that when incautiously given it sometimes leaves the system too sensitive of its effects; thus it cannot afterwards be given in the smallest doses without causing disturbance.

Mr. Hunt also states that in small doses arsenic is useful in diarrhœa, and relates cases in which an obstinate purging ceased, together with an eruption, under its influence.

In persons very susceptible of its effects, Mr. Hunt states that a remarkably small dose, such as the *fourth of a minim*, will be sufficient to cure the disease for which it is given. Another effect of arsenic, which Mr. Hunt thinks is not noticed by any other writer, is the production of a dirty brown discoloration of the skin. In this supposition, however, he is mistaken, as may be seen by a reference to art. 42, in the present volume, where M. Devergie distinctly alludes to the same appearance, and even goes so far as to say that the cutaneous disease cannot be considered as cured till it is produced.

From the preceding review of the action of arsenic, Mr. Hunt establishes certain therapeutic principles, the chief of which we transcribe:

The pulse and temperature of the skin must be reduced to a healthy standard by antiphlogistic means.

Fowler's solution may be given in five-minim doses three times a day *after* meals. The dose should be taken with regularity, and the patient should be seen twice a week. When the conjunctiva becomes inflamed the dose must be reduced, but the medicine must not be entirely abandoned until weeks or months after morbid action has subsided.

If the cutaneous disease should assume an inflammatory type during the arsenical course, it will seldom be necessary to discontinue the medicine, but the inflammation must be reduced by smart purgation and the application of leeches to the inflamed portions of skin.

The arsenical course should be protracted in reduced doses for as many *months* after the final disappearance of the disease as it has existed *years* before.

The curative power of arsenic will, in all cases, be found in doses too small to be mischievous.

In illustration of the foregoing opinions the author, in the second section of his work, relates cases of the different forms of cutaneous disease in which the efficacy of arsenic administered upon his plan is strikingly shown. Those cases include instances of inveterate eczema, impetigo, psoriasis, lupus, &c., and may be read with great advantage, not only for the purpose of understanding the author's views respecting arsenic, but as exhibiting a well-devised and scientific course of general treatment.

The last section of Mr. Hunt's work is devoted to an inquiry of no mean importance, viz., whether certain old-standing cutaneous diseases can be cured with safety. The author's decision is opposed to the general opinion, that the cure is hazardous. On the contrary, he believes that, with certain precautions, the removal of those long-established maladies is not only safe, but salutary.

In concluding this Report we think it right to state that there have been several important papers published during the past six months, of which our limited space precludes our mentioning more than the titles:

1. The Lectures delivered before the College of Surgeons, by Mr. Paget, on Nutrition, Hypertrophy, and Atrophy. Some portions of these valuable lectures will probably be noticed in the Report on Anatomy and Physiology, in the present volume; others will be more appropriately mentioned in a contemplated Report on Pathological Anatomy, which will appear in our next Volume. (*Med. Gazette*, May.)

2. Cases Illustrative of the Condition of the System, accompanied by Oxalic Urine. (*Prov. Med. and Surg. Journ.*, July, Aug.)

3. On the Contagion of Plague by Mr. Lindlaw. (*Edin. Med. and Surg. Journ.*, Oct.)

4. Researches on Cancerous Growths, by Dr. Bennet. (*Edin. Month. Journ.*, Oct.) Will be given in Report on Pathological Anatomy in next Volume.

5. On the Etiology of Enlargement of the Heart, by Dr. Barlow. (*Guy's Hospital Reports*, 1847.) In our next.

6. On the External Application of Aconitum Napellus, by Mr. Grantham. (*Med. Gazette*, Aug. 6, 1847.)



## II.

# REPORT ON THE PROGRESS OF SURGERY.

BY HENRY ANCELL, ESQ., M. R. C. S.

### § I.—*The Inhalation of Ether in the Practice of Surgery.*

Now that the impression created by the novelty of the inhalation of ether to prevent pain during surgical operations is somewhat subsided, our readers will doubtless be desirous of learning the more matured opinions of some of those who have had the best opportunities of testing this important discovery. The journals contain innumerable instances of successful surgical practice under its influence, by the leading surgeons of France, Germany, Belgium, Italy, and Spain, as well as in our own country and in America, among which the reduction of recent and long-standing dislocations, the removal of tumours and diseased bones, the reduction of strangulated hernia by taxis and operation, lithotomy, and the excision of joints, may be mentioned as prominent examples.

At the same time objections to its employment have been reiterated. We find several writers describe hysteria and excitement "to such an extent as would interfere with every capital operation," among its occasional effects\*. Mr. Richardson† infers, from a case which occurred under his own eye, in which it was administered previous to the extraction of a tooth, that the vapour may prove fatal from convulsions, induced by congestion of the brain, and that inhalation is inadmissible where there is a tendency to apoplexy, epilepsy, and other cerebral affections; in children, and in plethoric individuals. In the particular case referred to, convulsions continued until the patient was relieved by the extraction of eighteen ounces of blood. Dr. Wallace, of New York, observes that although persons of sound health may survive the effects of ether, there is risk of rupturing the vessels of the brain; that it is "dangerous to be made dead drunk by any cause;" and that where there is a tendency to apoplexy or mania, injurious effects may result.‡ M. Blandin has remarked on the danger of prolonging the inhalation, owing to the modification of the blood which it produces, transforming arterial into black or violent blood, and producing a semi-asphyxia;§ and Blandin and Velpeau consider that operations on the face should not be performed during etherization; the excision of a tonsil, it is said, may occasion suffocation. These are among the objections urged by particular writers, and it is right that the practical surgeon should consider the extent to which their validity is to be admitted.

—Mr. Syme's practice with ether was at first unsatisfactory; but he has since performed the following operations under its influence, the ether having been administered with a better apparatus:

1. A large fibrous tumour removed from the breast. From the commencement of inhalation to the conclusion of the operation four minutes elapsed; there was complete union by the first intention, and the patient was able to leave her bedroom before the end of a week.
2. Amputation at the shoulder-joint for osteosarcoma of the humerus. Union took place by the first intention, and the patient was up and dressed by the end of a week.
3. Excision of the shoulder-joint, including the head of the humerus and glenoid cavity, removed by dividing the neck of the scapula. Union took place by the first intention through the greater extent of the incision; recovery was delayed by slight erythema, but the case was advancing rapidly to a satisfactory conclusion.
4. Amputation of the foot by Cho-

\* Med. Gaz., April 1847, p. 611.

† The Boston Med. and Surg. Journal.

‡ Idem, 61.

§ Acad. of Med., March 29.

part's operation through the tarsus. Union took place by the first intention; there was slight suppuration under the integuments over the end of the fibula, requiring an outlet for the matter; recovery was nearly completed at the time of the report. 5. A large tumour of the scrotum, weighing two pounds, removed without the slightest unpleasant symptom, the wound being nearly healed. 6. A tumour of the jaw, requiring the removal of four teeth and a portion of the alveolar process. No unpleasant symptom occurred; the patient was dismissed a few days after the operation.

Mr. Syme and other surgeons have remarked that, in many operations, it is of the utmost importance that the patient should retain a voluntary control over his movements, not only for assisting the operator by executing those that he may desire, but also by abstaining from those which would be obstructive of the object in view. Mr. Syme, however, still says that he has known the operation for fistula in ano prevented by the convulsive efforts induced through the use of ether, and that in all careful dissections, as those for hernia, and for the removal of tumours from intricate connections of importance, the inhalation should be advised against. Mr. Syme illustrates his view of the limitation to the use of ether by stating that he lately disarticulated a clavicle from the sternum, for osteo-sarcoma, and dissected out some large deep-seated tumours of the neck, with results which he believes might not have proved so satisfactory if ether had been used. In operations affecting the nose and mouth, he agrees with the French authors already quoted, and that it is inexpedient to render the patient insensible, lest, from the want of voluntary effort, suffocation, or an approach to it, might arise from the entrance of blood into the air-passages. Finally, this surgeon warns against—and this should be particularly noted—administering the ether to persons in a great state of weakness or exhaustion.\*

—With these qualified opinions before us we were gratified at receiving a memoir by Dr. John Snow, who has enjoyed the most favourable opportunities, by frequently administering ether in St. George's and the London University College Hospitals, and has furnished the profession with the results of his experience† as to its effects in surgical operations. Dr. Snow gives the most unequivocal testimony to its safety and efficacy; he speaks with confidence of the "constant success" with which it is capable of being employed. Of 26 amputations in both hospitals, in all of which the ether was administered, 21 patients recovered and 5 died; being a little below 20 per cent., which is lower than the average mortality after the removal of diseased limbs; of the cases of lithotomy, five in number, all ended in recovery. There were 6 operations in which the whole mammary gland was removed, and the patients all recovered so far as the operation was concerned. After 78 operations in both hospitals there were but 6 deaths. In none of the 6 cases could the event have been caused, or in any degree promoted, by the inhalation, since there were sufficient and well-recognized causes to account for the result. The great safety of the process of etherization, under proper management, in cases which might be presumed to be the most unfavourable, is illustrated by a case, amongst others, in which a very tedious amputation was performed upon a man having extensive disease of the heart, etherization being carried to its full effect, complete insensibility induced for a quarter of an hour, not the least ill effect resulting, and the patient completely recovering from its influence before he was removed from the operating table.

Dr. Snow makes a better division of etherization into stages, as respects the practical utility of such a division, than those by Flourens and others, described by the Editor in our last volume. He divides the effects into *five* stages or degrees, admitting that these divisions are in some measure arbitrary, since they run into each other and cannot always be clearly distinguished; in the *first* degree, the feelings of the patient are changed, but he retains consciousness and the power of voluntary motion; in the *second* degree, mental functions may be exercised and voluntary actions performed; in the *third*, there is no evidence of any mental functions being exercised or any voluntary motion occurring, but muscular contractions may sometimes take place as the effect of the ether or of external im-

\* Month. Jour. of Med. Science, Aug. 1847, pp. 74-6.

† On the Inhalation of the Vapour of Ether in Surgical Operations. 1847.

pressions; in the *fourth* degree, no motions are seen except those of respiration; in the *fifth* degree (not witnessed in the human being), the respiratory movements are more or less paralyzed, and become difficult, feeble, or irregular. The phenomena, in these different degrees, are accurately described by Dr. Snow. A surgical operation would cause pain in the second degree, and it would be more difficult to operate in this stage with than without ether. If the third degree be not well established when an operation begins, the first cut may cause a sudden contraction of the whole muscular system, and struggling and rigidity may occur, although there is never any recollection of operations in this degree: the fourth degree is that in which operations ought to be performed: in it the patient always remains perfectly passive under every kind of operation: this is also the proper stage for the reduction of dislocations; the patient never begins to snore until he has reached this fourth degree, or is passing into it from the third, and when snoring occurs there is a total insensibility to everything which is done: in the fifth degree, as met with in animals, the respiration begins to be irregular, feeble, or laborious; this is the stage immediately preceding *death*, and there can be no doubt that fatal results would be met with in the case of man, if the vapour were administered so as to increase its effects beyond what is ever required; this degree is only mentioned as a state to be avoided. Dr. Snow is in the habit of continuing the inhalation until after the operation is commenced, but so soon as there is the least sign of snoring he always leaves off the vapour entirely, even without waiting for the commencement of an operation which he had requested might be proceeded with.

The work contains some of the physiological details respecting the *modus operandi* of ether; its relaxing effects are much greater than those of the warm bath and emetics; a dislocation of a shoulder, after weeks' duration, for instance, in a muscular man, was reduced under its influence, the muscles being completely relaxed; the experimental and physiological matter we are compelled to pass over, in order to place before our readers the more practical result. We may state, however, that in explaining the difference between asphyxia, or the exhibition of narcotics by the stomach, and etherization, it is stated that, however nearly *dead* animals may be from the action of ether, if the breathing has not actually ceased, when the vapour is discontinued they always recover; so far from agreeing in M. Blandin's opinion, before alluded to, Dr. Snow regards etherization, in its effects on the blood, as totally different from asphyxia. Etherized blood affects the medulla oblongata sooner than the ganglionic system, so that respiration ceases before the circulation.\*

We may state with confidence that of the failures recorded in the journals, by far the greater number have obviously occurred during an imperfect state of etherization; even the exceptions made by Mr. Syme, and the limitation laid down in his communication, by no means necessarily hold good, and, without denying that there are circumstances under which the use of inhalation may be contra-indicated, these can only be arrived at by the statistics of operations performed, during what Dr. Snow designates the *fourth* degree, or during the perfect state of etherization, which circumstance indicates the necessity for surgeons being well acquainted with the proper mode of regulating the process, and never attempting it, for the purpose of submitting a patient to an operation, without being assured that the ether to be employed is of good quality, nor without an apparatus to be thoroughly depended upon.

Dr. Snow further states that he is not aware that any circumstance with respect to age, constitution or disease positively contraindicates the use of ether during a surgical operation. The patients to whom he has given it have been in the most different conditions of general health; two or three had symptoms of tubercles in the lungs; one had extensive disease of the heart: two or three had been subject to attacks of congestion of the head, and yet there have been no ill consequences from the ether in any case, and not even any unpleasant effects to counterbalance its advantages, except sickness and vomiting in a few instances. There are, however, certain states of the body in which ether sometimes acts less energetically than in others; but these are states in which we seldom find patients who require



surgical operations. Persons in robust health are sometimes less easily made insensible than others, and are more liable to excitement in the second degree, and to struggling in the third degree, and also to have a headache after the ether. Such persons, however, do not often require even a trifling surgical operation, and if they do, a little abstinence and purgation will place them in favourable circumstances. And if a person in robust health should require an operation, the temporary depression consequent on the injury, and usually also loss of blood, would serve as a preparation. On the other hand, to the contrary of the opinion which we have quoted from Mr. Syme, insensibility is induced, according to Dr. Snow, with great ease in persons debilitated by long illness, and in children under all circumstances. Children are, indeed, amongst the most favourable subjects for ether, recovering from its effects as promptly as they are brought under its influence, and it possesses more than the usual advantages in their cases, as, without it, their struggles would often interfere with the performance of the operation.\*

Among the practical rules laid down, the *position* of the patient during inhalation is worthy of consideration. In nearly all capital operations, the position which the surgeon would select, independently of the ether—viz. on the back, with the head supported on a pillow—is very favorable. For operations on the anus, the patient has to lie on the side, with the knees drawn up, as it would be impossible for him to stand, or even to kneel, and lean over a chair or table, when insensible. Sitting upright in a common chair is not a good position, and should, therefore, if possible, be avoided. It has answered very well in a number of cases, but on two or three occasions caused some difficulty, either from the patient, when insensible, having a tendency to slide off the chair, or from his stretching his limbs out, in the second or third degree of etherization, when it became impossible to keep him seated. If the patient is obliged to be seated, a chair with a high back, to rest the head against, is the best seat. The dentist's chair answers very well for his operations, as the patient is partly reclining, and has the head supported.

When, during an operation, the inhalation having been discontinued, it is necessary to *resume* it, the time for doing so must depend on circumstances. If any important steps are going on, it is advisable to anticipate the return of sensibility to pain, and to resume the inhalation as soon as returning sensibility of the eyelids, or any voluntary motion in them, shows that the patient is returning to the second degree. If only some secondary part of an operation—as the tying of arteries—is going on, we may wait till there is some sign of the operation being felt, before resuming the inhalation, and it will remove any such sign in a very short time, it being seldom necessary to continue the inhalation more than half a minute; or a minute at the furthest, if the valve is closed and the vapour of full strength when it is resumed during an operation, after insensibility has been previously induced. There is very seldom any struggling in the third degree, as it succeeds to the fourth; but if there be, it may then become necessary to give more ether to keep the patient in the fourth degree for some time, not because he would feel pain with a less degree of etherization, but because he would not remain sufficiently still.

Again:—*Insensibility to pain may be kept up for a long time without risk*, by allowing occasional partial recovery from the effects. Dr. Snow kept an elderly gentleman quite oblivious for two hours and a half after Mr. Liston had applied a thick paste of chloride of zinc to a large ulcerating tumour in the face. Each time that he began to feel the smarting, the ether was resumed; at first, after intervals of ten minutes, then of a quarter of an hour, and finally of twenty minutes, the recoveries becoming each time more complete before the pain recurred. But the patient had no recollection of them, for each time that he recovered his consciousness, he asked if Mr. Liston had gone without applying the caustic. At the end of two hours and a half, having been allowed to recover more completely than before, he considered that the pain was not more than he could bear, and the inhalation was not resumed. Five fluid ounces of ether were used, and no effects of any kind followed, unless that the pain, for some hours, was not so great as it probably would have been.

Finally, under all these circumstances, except a headache, on one or two occa-

\* On the Inhalation of the Vapour of Ether, p. 27.

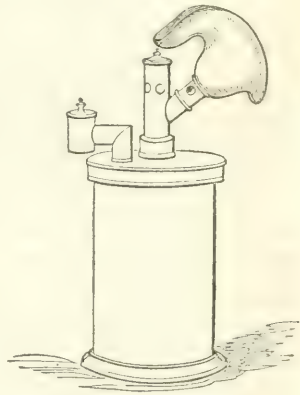
sions, the only unpleasant effect that Dr. Snow has ever seen from the inhalation, has been sickness and vomiting, which are only occasional results, and seldom occur except when a meal has been taken just before the ether, a measure which the author prevents when he has the opportunity. It is when, after a meal, the etherization is deep—for instance, in the fourth degree—and continue for some time, that vomiting is most likely to occur. It may take place either during the insensibility or not until afterwards. When sickness occurs, it greatly prolongs and increases the insensibility to what the surgeon is doing; even if the consciousness has returned, pain is seldom felt during the sickness. The nausea and vomiting generally subside immediately, but, in two or three instances, have continued till the following day.

We have thus laid before our readers, in addition to the detailed Report by the Editor, published in the last Volume (p. 328), some of the more essential practical facts which have since been developed, so far as surgery is concerned. Our extracts also contain a few illustrative cases. (Art. 62, p. 96.)

The best apparatus for the administration of ether which we have yet seen, we believe to be one invented by Mr. Squire, and here delineated:

It is constructed on the principle of the Archimedeian screw, by means of which, the largest possible surface in a given compass is obtained: and is of the size of an ordinary Mudge's inhaler. A spongy material entirely covers the screw, which will absorb two fluid ounces of ether, over which the air passing in one continuous stream, and on its passage imbibing the maximum quantity of the vapour of ether, enables the patient to inhale with perfect ease. The adjusting ferrule near the mouth-piece, affords the operator the power of diluting the vapour to any strength required. The mouth-piece, when pressed under the nostrils, closes them, thereby dispensing with the disagreeable necessity of holding the nose.

This apparatus has also the advantage of being less expensive than those in general use, and having no glass in its construction, is less liable to accident.



## § II.—*The Application of Galvanism in the Practice of Surgery.*

After the inhalation of ether, one of the most interesting subjects at present under investigation, is the application of galvanism to surgical practice. In our last Report\* we furnished our readers with some of Dr. Bellingham's opinions as to its use in the cure of aneurism, which are by no means favourable; also with Dr. Apjohn's account of its *modus operandi*; in the present Volume will be found an extract relating to the action of the galvanic current upon urinary calculi, and upon the bladder itself (art. 68, p. 107): but it is in affections of the arteries and veins that this physical agent appears at present to have been called most successfully into requisition. The subject is manifestly in its infancy; it has met with comparatively little favour either in this country or in France or Germany; the Italians entertain the most sanguine expectations as to the efficacy of galvanism as a remedy, and it is to them that we are mainly indebted for the more recent experiments.

1. *The Treatment of Varices by Galvanism.*—The Italian journals contain numerous cases of varices said to have been cured by galvano-puncture, although this method of treatment has been very little resorted to in any other country. The subject was referred to in our last Volume, pp. 110 and 197. The editor of the "Medical Gazette" of Paris has subsequently remarked,† that although considerable pain is the usual effect of each operation, yet such pain, and the inflammation which follows, are so obviously produced by the needles having been but

\* Half-yearly Abstract, Vol. V. p. 196.

† July 10, 1847.

imperfectly coated with the isolating varnish, that this circumstance ought not to prejudice the operation. The following additional cases are recorded by M. Gamberini:

A man, aged 24 years, had varices of the principal venous trunks of the left leg, rendering walking very painful; on the 24th of November, 1846, after bandaging the limb, as for the operation of venesection, M. Gamberini implanted four steel needles crossways into the principal venous trunk, their points being plunged into the interior of the vessel, but not allowed to remain in contact with its parietes. He then put into communication with two of the needles the positive and negative poles of a voltaic pile, in which there were twenty-four discs of two inches diameter. The electric circle was scarcely formed when the patient complained of the most violent pain, but on continuing the operation, he only experienced a slight heat, occurring at intervals, as the electric circle was re-established. After a few minutes a yellowish areola was established round the negative needle, which shortly became a vesicle filled with serous fluid, and finally the epidermis broke. On adding to the pile, the pain was so much increased that the patient could not endure it. After a quarter of an hour the conductors were applied to the two remaining needles, but spasm occurring, the experiment had to be suspended. The positive needle was easily withdrawn, but the negative needle, oxidized at its point, was drawn through the tissues with difficulty, and was followed by a little blackish blood. The portion of vein comprised between the needles was hard, blackish, and manifestly contained a clot; the limb was then bandaged; six hours afterwards there was a little fever, preceded by a chill, which subsided in the night; in the morning there was slight ulceration at the site of the negative needle; the vein continued black and hard, and the current of blood was arrested above the clot.

The obliteration of this vein being thus effected, galvano-puncture was employed, six days afterwards, in another trunk, the folds of which constituted a varicose group; a pile of thirty plates was employed; the operation was continued twenty-five minutes; there was no other painful sensation than that of a weight, and the obliteration was obtained without any reaction. The operation was repeated on two other veins with similar success, and progression daily improved.

A man, æt. 36, had suffered with varices many years; one in particular, situated in the neighbourhood of the internal malleolus, was very large. M. Gamberini made the first galvano-puncture on the 5th of December, with five pair of plates, increased to nine, and only two needles. This agent successively employed in three different points produced obliteration of the vein, and there was no general reaction.\*

Contradictory accounts having been introduced into the journals respecting the effects of electro-puncture on the blood as it flows in the vessels, a commission was proposed by Dr. Calderini, for the purpose of repeating the experiments and reporting on their value. M. Asson, the reporter, arrived at the following conclusions:

1st. It is possible by electro-puncture to produce a coagulation of the blood in the vessels, and the formation of a clot composed of a certain number of fibrinous granulations connected together and adherent to the walls of the vessel, so as completely to intercept the circulation.

2d. The clot is produced independent of any alteration of the arterial tunics which could be attributed to inflammation, or its results, or to a thickening and coarctation of the vessel. The swelling which the vessel sometimes presents anteriorly depends upon a separation of the arterial tunics, calculated rather to dilate the vessel than to diminish its calibre.

3d. The granulations, which form the clot, begin to form from the moment the pile is applied. In ten, twenty or thirty minutes the clot is sufficiently solid, so as to suffice for the obstruction of the vessel.

4th. A clot may be formed in this manner as well in the veins as in the arteries, with this difference, that the venous is softer and deeper coloured than the arterial clot.

5th. The clot produced by two ligatures placed on an artery is less consistent and deeper coloured than the clot produced by electro-puncture.



6th. The clot comprised between the two ligatures treated during life by the electric-current has the same characters as that which is formed without the aid of electro-puncture, proving that for the formation of a solid and resistant clot, it is necessary that the part submitted to the experiment should be under the influence of the circulation in its normal state.

7th. The blood extravasated from the vessels and submitted to the electric current presents the character of a black areola and a froth around the needles, but does not coagulate, which is contrary to the statement of M. Pêtrequin.

8th. Neither the species of animal, nor the diversity of chemico-physical or electric conditions of the blood, nor as respects the current, the diversity of the direction given to the needles' influence, *cæteris paribus*, the formation or non-formation of the clot.

9th. Galvanism is a mode of producing a solid, obstructing clot, without cauterizing the arterial tunics, and without producing any serious effects on the system, especially if we operate by a continued current.

10th. The hemorrhage which occurs when the needles are withdrawn, generally from the negative pole, is of little importance, and easily arrested by the application of cold water.\*

Our readers will doubtless compare this statement with Dr. Apjohn's account of the *modus operandi* of galvanism in causing the coagulation of the blood in an aneurismal sac.† The two accounts appear to be totally at variance, and to lead to diametrically opposed practical conclusions.

2. *Aneurism at the Bend of the Elbow cured by Electro-Puncture.*—M. Restelli describes a case, respecting which, the editor of the "*Gazette Médicale*" has remarked that it was so simple, and its success so prompt, that we must no longer doubt the efficacy of the method. In consequence of a severe contusion, a phlegmon developed itself over half the forearm of the patient, and after its resolution a tumour remained at the bend of the arm. The tumour was about the size of a walnut, and manifestly an aneurism. Two needles were implanted, to the extent of six lines, in the tumour, and in such a direction that their points were opposed to the current of blood; the needle intended to correspond with the positive pole was placed above, and the other eleven lines below, and a little sideways; having then attached the conductors to their poles respectively, and brought the pile into play, as soon as the galvanic circle was formed, the patient made a violent movement, not only of the arm, but of the whole of the right side of the body. He soon after became tranquil, complaining only of a slight smarting at the point occupied by the positive needle. The limb was free from all compression. In twelve minutes the pulsation became invisible to the naked eye, and presented to the finger no more than a distant shock. The size of the aneurism, however, remained the same, and its consistence was equal to that of a fatty tumour. The needles were withdrawn at the expiration of twenty minutes, the negative one easily, but the positive with some slight difficulty; the latter was blackened, and the puncture was surrounded with a black circle. The tumour was firm and no longer indicated any pulsation either to the finger or to the ear. The humeral artery continued to beat, but the radial and cubital arteries had suspended their pulsations. There were a little torpor and formication in the forearm and hand, and a little heat around the aneurism. The tumour diminished in size about one-third in the first ten days, and in about five weeks was of the size only of a very small filbert, hard and without the slightest pulsation; the circulation became completely re-established in the radial and cubital arteries, and the motions of the limb as free as before the disease.

M. Restelli proposes the following rules for this method of treatment:

1st. In conformity with the opinion of M. Pêtrequin, and contrary to that of Dr. Siccone, he prefers a pile of many small discs, which augments the electric tension, at the same time diminishing the quantity of the fluid. In this manner the coagulating action, the force which induces the formation of the clots, increases, while the quantity of caloric diminishes.

2d. He also agrees with M. Pêtrequin on the utility of covering the needles with an isolating coat over the portion which is plunged into the tumour; but has not

\* *Annali Universali di Med.*, Jan. 1847.

† *Loc. cit.*

succeeded in producing a varnish with a sufficient polish that would adhere to the needle.

3d. He insists on the advantage which results from placing the needles in a direction contrary to the course of the blood. By this disposition they constitute, by their presence alone, an obstacle to the circulation, which may initiate the coagulation, and be auxiliary to the electric action.

4th. He remarks, that in operations of this kind, the poles have generally been changed after the lapse of a certain time, putting the zinc pole to the needle which was first attached to the copper pole, and reciprocally. It is of the greatest importance, on the contrary, not to vary the poles during the whole sitting; for if it be true that the clot which forms round the needle of the zinc pole may be explained by meeting at this point with the acid of the salts, which the pile decomposes with the albumen of the blood, we see clearly that the substitution of one pole for the other may risk the resolution of the clot already in the process of formation, by setting alkali free, which would be capable of dissolving the coagulated albumen.\*

—Dr. Finella published a paper in Dec. 1846, on the application of galvanism in ophthalmic and aural surgery, in which he concludes, from facts recited, that a continued galvanic current is most efficacious, both in amaurosis and in preventing nervous deafness.†

### § III.—*Injuries and Diseases of the Arteries and Veins.*

3. *The Treatment of Aneurism by Compression.*—Dr. Bellingham has published his "Observations on Aneurism, and its Treatment by Compression," in a small volume;‡ but the practical part of this memoir having been partly introduced into the Abstract, and the remainder not admitting of being very briefly reported, we are compelled to defer it to a future volume.

4. *A new Instrument proposed for the Compression of Arteries.*—To convey an idea of this instrument, invented by M. Biagnini, it must be compared with a pair of double compasses, the metallic limbs of which can be firmly fixed at the required degree of divergence. A large pad is placed on one of the free extremities, to be applied to the part of the limb diametrically opposite to the artery intended to be compressed. The other branch carries the plate to act on the artery itself, and it is in the form of this, and the mode in which it is articulated with the branch, that the novelty consists.

It consists of an oval metallic plate, with an opening at each centre of the ellipse, in which is placed a long compression screw, one of the ends of which terminates in the form of a key, to allow it to be easily turned, and the other is furnished with a small elongated pad. The intention of the inventor has been, that these two small pads should be applied, at the will of the surgeon, either in the direction of the course of the artery, or transversely, or obliquely over it. For this purpose, around each of the openings which give passage to the screw, the plate is pierced with two slits, in the form of an arc of a circle, concentric to the openings, and encircling them on each side like two parentheses. Over these a nut, of the diameter of the space circumscribed by the two slits, is fixed, and two metallic stems being soldered on the superior face of the two pads traversing the two slits, and being fixed on the nut placed above these slits, it may be understood that the surgeon could at will give to the pads any direction he might desire, and fix them, by means of the screw, so that they rest in the direction of the artery, or cross it more or less obliquely. Another point was to give such an inclination to the pads that they might act perpendicularly to the plane of the region of the artery to be compressed. It was necessary for this purpose that the plate itself should be capable of being placed at a variable angle, according to the obliquity of the surface and the size of the limb. This is easily effected by a joint between the plate and the branch of the compass, which, although movable, can be firmly fixed at the required angle. The branches of the instrument can then be opened from two to eight inches, and it becomes thus equally applicable for the compression of the external iliac of an adult, or the brachial artery of a very young infant.

\* Gaz. Méd., 17 Juillet 1847.

† Annali Univ. di Med.

‡ 1847.

The two pads placed beside each other constitute one of the greatest advantages of the mechanism, since it allows the pressure to be applied to the same point of the vessel only for a short time, and still it is not necessary to suspend the operation. When, for example, the pad placed at the greatest distance from the heart, alone compresses the artery, the action of the artery becomes very sensible above, and indicates the situation where it is required to put the pad, when it becomes necessary to set free that portion of the vessel primarily compressed. In many cases, where it is sufficient to relax the circulation without entirely suspending it, M. Biagnini's instrument is said to effect the purpose most efficiently. Lastly, by the elongated form of the pads, which allows the pressure to be made over a greater extent of the vessel, the pressure may be allowed to be less severe, while it is not less efficacious. The two concentric slits at each opening, are especially useful in affording the means of directing the large diameter of the pad transversely to the course of the vessel, whatever may be the direction of the vessel with relation to the axis of the limb wherein it is situated.\*

—Dr. Bellingham mentions a double-padded compressor as having been invented by Mr. Millikin, but not answering so well as two separate instruments.† The mechanism is not described, and accordingly, we cannot say how nearly it may approach to M. Biagnini's contrivance.

5. *Aneurism of the Basilar Artery.*—Our last Volume contains the details of a case of this rare disease, by Dr. Raschenberger (p. 189), and the "American Quarterly Journal"‡ has collected three cases more which have been recently recorded.

One case was communicated to the Pathological Society of Manchester by Dr. Francis. The aneurism arose from the junction of the left carotid and posterior communicating arteries, and involved both these vessels. Upon the outer and inferior wall was a ragged opening, a line and a half in length, through which fatal hemorrhage into the surrounding parts had ensued.

The lateral ventricles were greatly enlarged, and filled with clotted blood, mingled with flocculi of brain, which had been broken from their walls and the central parts between them. The fourth ventricle was much distended by the hemorrhage, which had also extended around the medulla oblongata, cerebellum, and the base of the brain generally.

The left side of the heart was empty, the right, together with the lungs, full of blood, and, excepting a few small spots of commencing atheroma in the thoracic aorta, the viscera of the trunk were sound.

The patient, a female servant, æt. 62, had gone to bed in apparent health, after having eaten her ordinary evening meal, and whilst in the act of rising on the following morning was suddenly, and without any warning, seized with semi-convulsions, passing rapidly into profound coma, in which she died rather less than an hour from the seizure.

She had gone about her duties with the appearance of health, and had made no complaints to those about her of any premonitory symptoms.

Judging from the time which elapsed before death took place, it is probable that the opening in the artery was gradually increased in size, and that the force of the extravasated blood expended itself upon the central and anterior parts of the brain, before it invaded the medulla oblongata; the situation of the bleeding point being mainly instrumental in determining the rapidity of death.

The rupture itself appeared to have been the result of gradual attenuation of the walls of that part of the sac rather than of any vital change leading to their disintegration.§

—Another case was communicated to the same society by Dr. Eager. The aneurism was situated near the bifurcation of the basilar into the cerebral arteries. The entire tumour was small, not exceeding in size a common pea, and it had a ragged fissure, through which the blood had flowed during the fatal seizure. The position of the aneurism was in the track of the portio dura, and had obviously pressed upon the origin of this nerve, as appears from the following detail of symptoms.

\* Gaz. Méd., 10 Oct., 1846, from the Bull. delle Scienze Mediche.

† Lib. cit., p. 97.

‡ April 1847, p. 431.

§ London Med. Gaz., July 1846.



William Yates, æt. 58, began to complain, nine months ago, of distressing pains in the head, which extended from back to front, but were not lancinating. Three weeks subsequently paralysis of the right side of the face followed, and was continuous until the day of death, affecting all the parts supplied by the right facial nerve. The pains in the occipito-frontal region, at all times severe, were increased after the ingestion of food. There was no deviation of the tongue, and deglutition was naturally performed. The thoracic and abdominal viscera were all healthy.

These symptoms remained unaltered until two weeks before death, when, in the night, he was seized with hemiplegia of the left side. The tongue could no longer be protruded, the powers of utterance failed, and deglutition was so extremely difficult as to threaten suffocation at each attempt to swallow.

He continued in this state until death, which happened suddenly during a fit of laughter caused by the conversation of a friend. Throughout the entire illness the mental faculties were unaffected, and the memory was as good as at any former time.

The body was examined twenty hours after death. In sawing through the calvarium at least two ounces of fluid blood escaped through a rent made in the membranes. Blood was generally effused over the surface of the brain, and a firm coagulum was found at the base. There was considerable serous effusion into the lateral ventricles, in the anterior portions of which coagula were also observed. The velum interpositum was broken down from mechanical pressure. The basilar artery presented appearances which were illustrated by a woodcut.

Dr. Eager remarked that the aneurism satisfactorily accounted for the principal symptoms, and especially for the paralysis of the muscular parts supplied by the facial nerve. That the occurrence of hemiplegia could alone be accounted for on the supposition that a small fissure in the aneurismal sac, with a certain amount of hemorrhage, had happened two weeks before death, and which, from favourable circumstances, had closed up, and thus for some days prolonged the patient's life. And, further, that the fatal attack was explicable by the presence of a great quantity of fluid blood to all appearance recently effused.\*

The occurrence, within so short a period, of two such rare aneurisms as the present, and the one exhibited at the meeting in July by Dr. Francis, contrasting so remarkably in their symptoms both before and at the period of death, in the absence of suffering during life, and the comparatively slow death in the one case, and the long continuance of the pain, and the instant death in the other, appear to have excited a lively attention. The reason for the presence of so much pain in the one case and its total absence in the other, forms an interesting subject for further investigation.

—A third case is recorded in Dr. Pfeufer's General Report, March 1844.

6. *Deligation of the Carotid Arteries.*—The July number of the "American Journal" contains an article by Dr. Norris on the statistics of the mortality and other circumstances relating to deligation of the carotid arteries and the arteria innominata, of the same comprehensive nature as those on ligature of the iliac and subclavian arteries, already brought under the attention of our readers. The substance of this paper will appear in our next Volume.

#### § IV.—*Hernia.*

7. *Strangulated Hernia treated with Opium.*—Several articles on this subject have appeared in the "Provincial Medical and Surgical Journal." Cases of the successful employment of this remedy have been published by Mr. Davis, of Presteign (Prov. Med. and Surg. Journal, Aug. 18, 1841); by Dr. Bell of Carlisle (Monthly Jour. of Med. Sci., Sept. 1841); Mr. Cooper, of Greenwich (Med. Gaz., Feb. 18, 1842); Dr. J. Ross (Monthly Jour. of Med. Sci., Jan. 1843); Mr. Walker, of Newcastle-on-Tyne (Med. Gaz., Jan. 12, 1844); Mr. Rowlands, of Ironbridge (Prov. Med. and Surg. Journ., Feb. 5, 1845), and Mr. Butler Lane (Prov. Journ., May 21, 1847). The last paper is given as an extract in the present Volume (art. 80). Mr. Mayo, of the County Hospital, Winchester, describes a case of strangulated femoral hernia successfully treated by this remedy. After taking six pills, with

\* Lond. Med. Gaz., Aug. 1846.

one grain of opium in each, at intervals—first of an hour, then of four hours—the strangulation was effectually relieved. Dr. Richard Long, of Athurstown, has also related another case (Dublin Medical Press, May 12, 1847); this was an inguinal hernia; every effort at reduction had been unsuccessfully employed, and the necessity of an operation seemed inevitable; a pill, containing three grains of opium and two of calomel, was directed to be given every hour, and an enema of strong chicken-broth thrown up every fifteen minutes, in order to support the failing strength of the patient. The three first pills were speedily rejected, the fourth and fifth were retained; a cessation of pain and vomiting followed, and by the time that eight pills were given, an urgent desire to evacuate the bowels followed the administration of one of the broth injections, which led to relief and perfect recovery.\*

8. *Results of the Operation for Strangulated Hernia.* By Boyer and Manec.—In the hospital practice of MM. Boyer and Manec, since the year 1833, fifty-eight operations for strangulated hernia have been performed, the results of which are interesting as regards the propriety of employing *taxis*. Thirty of these cases were operated upon by M. Boyer. From 1834 to 1839 M. Boyer did not proceed to the operation, till prolonged attempts at reduction had been made; during this period *nine cases* were operated on, of which *eight* died, and *one* recovered. From 1839 to 1843 he employed the *taxis* to a much more limited extent: *seven cases* were submitted to operation, of which *four* died and *three* recovered. From 1843 to 1846 he had almost entirely abandoned the use of the *taxis*, and out of *fourteen cases* on which he operated, *four* died and *ten* recovered. M. Manec, on the contrary, during the same time, placed little reliance on the *taxis*, and uniformly proceeded almost at once to the performance of the operation. The results of this practice were that, of *twenty-eight cases* operated on, *two* died, and *twenty-six* recovered.

The practical deduction to be drawn, it is said, from these statistics, is that the employment of the *taxis* is productive of much harm. "No statement, however, is made as to the results of the cases which were successfully treated by the *taxis*. To judge fairly of the good or evil resulting from the attempts at reduction, the entire number of cases of strangulated hernia admitted into the hospitals should be given; and we doubt not that in such an aggregate of cases the number of recoveries would be greater, where the *taxis* is moderately and judiciously applied, than where the operation is uniformly at once performed." The conclusions drawn by MM. Boyer and Manec are—first, that the operation for hernia, performed at an early period, and before symptoms of peritonitis have declared themselves, is almost free from danger; and second, that peritonitis never occurs subsequently to the operation, if it has not been present before its performance.†

#### § V.—*Injuries and Diseases of the Urino-Genital System.*

In addition to our Report in the section on the inhalation of ether, the following notice deserves the most attentive consideration. In no instance will this potent antidote boast a greater triumph, than in relieving the exhausting and almost unendurable agony which attends the passage of renal and biliary calculi, particularly if experience shall prove that, under its influence, the passage of the calculus is promoted, or even if it should not be retarded.

9. *Ethereal Inhalation during the Passage of Renal Calculi.*—Dr. Ware makes the communication on this subject to which we refer.‡ Opium had been given with only slight relief, and the suffering was most severe; the ether was administered at a quarter before nine o'clock in the evening. The patient did not become at any time entirely insensible, but was very soon comparatively easy, and remained so as long as the influence of the remedy continued. As soon as pain returned he requested a repetition of the inhalation, and was again relieved. The pain still returned, from time to time, as the influence of the ether subsided, but was kept under by a renewal of the process until three o'clock in the morning, when

\* Prov. Med. and Surg. Journ., July 16, 1847, p. 319.

† Month. Journ. of Med. Science, May 1847, p. 851, from the Revue Méd.-Chirurg., Feb. 1847.

‡ Boston Med. and Surg. Journal, May 1, 1847, p. 205.

the patient became so easy that it was no longer necessary. During this period of about six hours, there were *thirty* repetitions of the operation which were counted, besides several others which were not.

The following practical inferences by the author are worthy of being noticed in connection with our general Report on the subject of Ether Inhalation :

1st. That a pain of this description, which is not relieved by large doses of opium, may be mitigated by inhalation of ether, without suspending the natural course of things by which its cause will be sooner or later removed. Hence this remedy may be applicable during the passage of a biliary calculus, in colic or in other cases of spasm.

2d. That an individual, as shown by Dr. Snow, may be kept under the continued influence of ether for a long time with safety.

10. *Lithotritry*.—In November last, M. Civiale\* read a memoir to the Academy on the results of methodical lithotritry, applied in those cases only for which it is appropriate. From 1836 to 1845 he operated on 266 patients, and obtained 259 cures, some of which were incomplete. He was consulted in 79 cases not adapted for lithotritry ; of these he operated on 28, and saved 17; the remainder died of the disease. In all, M. Civiale had operated 582 times by lithotritry, up to June 1845.

11. *Lithotomy*.—M. Carri† had a patient who, after suffering the most violent symptoms of stone, spontaneously voided a calculus weighing 161 grammes (3½ oz.) through a dilated urethra, with pain of greater intensity than labour pains; it measured 3 inches and 5 lines by 2 inches and 7 lines; its surface was smooth, and it was composed of external layers of ammonio-magnesian phosphate, and carbonate of lime and magnesia, on a nucleus of uric acid.

—Dr. Kerr of Aberdeen, describes a case, in which death took place from hemorrhage on the fifth day; the flow of arterial blood during the operation was profuse, although not alarming, and every precaution had been taken to avoid wounding the arteries of the bulb; the hemorrhage ceased spontaneously after the removal of the stone on the morning of the fifth day, when all danger appeared to have been surmounted; the urine, all of which flowed per urethram, was tinged with blood, and in an hour afterwards the case was, to all appearance, beyond the reach of art, the patient presenting the character of sinking from loss of blood. No blood passed from the wound, but the bladder was manifestly distended by internal hemorrhage to half way between the pubis and umbilicus, and the patient died in a few hours. On post-mortem examination it was found that the hemorrhage proceeded from a variety in the distribution of the arteries of the perineum. The artery of the bulb and the transverse artery of the perineum came off from the pudic by a common trunk, which soon divided, and the artery of the bulb being much lower down or farther back in the perineum than usual, traversed the line of incision, and was, of course, divided along with the transverse artery. Dr. Kerr reproduces the following remark of Baron Boyer:—"Hemorrhage is one of the most common accidents attendant on lithotomy, and has often been laid to the account of the operator, or the particular operation he selected; but contrary to all justice, for the arteries of the perineum present such varieties, both in situation and in their course, that the most dexterous surgeon cannot be certain of avoiding them, no matter what operation he may perform."‡

12. *The Operation for Phymosis*.—In a case reported in the "Dublin Medical Press,"§ Dr. Hargrave cut the prepuce from the root of the glans *downwards and forwards* from its inferior aspect by the frenum. In place of the prepuce being circumcised, it was slit open, not along the dorsum, but as close and as parallel to the frenum as could be effected. This plan is infinitely to be preferred to the one in the opposite direction, or along the sides of the prepuce (which is too often adopted), for the following reasons:—1st. The diseased or ulcerated surfaces of the glans are most readily brought into view, and their characters ascertained for the requisite local and constitutional treatment. 2d. No deformity results from the incision, as the prepuce can be either retracted or drawn forward, preserving its normal appearance; while, if the other method is selected, i. e., slitting up the

\* Journal de Chirurg., Dec. 1846, p. 369.  
the Gaceta Medica.

† Nouvelle Encyclog., Dec. 1846, from  
Edinb. Med. and Surg. Journal, July 1847, p. 155.

§ Wednesday, Aug. 25, 1847.



prepuce indifferently, so as to expose the ulcer, the deformity is always great, the penis presenting a triple termination when the incisions are healed; the glans may then be named a *glans alata*, the flaps of the prepuce forming the winged appearances, which will then call for a second operation, unless that they have been removed immediately after the primary one of slitting, which is always a very painful proceeding.

Cloquet was the first who proposed this operation, which is a valuable addition to operative surgery.

13. *Remedies for Incontinence of Urine.*—1st. *Benzoic acid* has been employed with success against this complaint; it is given in doses of twelve grains daily, half in the morning and half in the evening, and this dose may even be doubled. M. de Fraene, of Brussels, records a successful case in a girl between 13 and 14 years of age, who was attacked with nocturnal incontinence, after recovering from a second attack of acute rheumatism. The complaint was neglected for several months; there was no pain in the part, the appetite was good, and the bowels regular, but the face was pale. Various remedies were employed without success, after which, two drachms of benzoic acid were made into forty pills, four of which were taken night and morning, and the complaint was completely cured.\*

2d. *Camphor.*—A woman, aged about forty years, was received into the Hôtel-Dieu, under M. Guerard, to be treated for incontinence of urine and pulmonary emphysema. The first infirmity appeared to depend upon a phlogosis of the neck of the bladder. The urine passed involuntarily both night and day. The asthma was treated with acetate of ammonia (*“un gros et demi”* every twenty-four hours). The emphysema was much ameliorated, the respiration became more easy, and the asthmatic attacks after a few days ceased. The incontinence of urine, however, continued, for which enemata were ordered, containing four grains of camphor dissolved in yolk of egg, and mixed in a little water, so that it might be retained in the rectum. This treatment alone sufficed to remove the incontinence for some time. In a few weeks, however, it returned, and was once more removed in the same manner. At present the enemata are continued as a *prophylactic*, and the cure seems to be permanent.†

#### § VI.—*Injuries and Diseases of the Spine.*

14. The article in our last volume (p. 203), and those in the present (89 and 112), on the subject of curvature of the spine, cannot fail to interest the practitioner. The rules laid down to regulate the treatment of these cases have been so diverse, and the results have, for the most part, been so unsatisfactory, and at the same time the affection is of so frequent occurrence, that every suggestion in the way of practical improvement demands attention. In this country we believe that too little regard has been had to anatomy and physiology in much that has been written on the subject, and many of the received dogmas have been dictated by pure empiricism. The more recent productions of the press appear to be directed to the correction of this evil, and in the works both of Mr. Coles and Mr. Lonsdale, we find the subject submitted to physiological reasoning. In the work by the latter, which upon the present occasion we have most amply quoted, the physiology of lateral curvature is much more minutely investigated than in any of our English works, and the practical rules of treatment are founded on the principles elicited. To the innumerable expedients contrived by different continental and British surgeons for the purpose of effecting pressure or extension, or both, for the cure of spinal curvature, as those of Heister and Van Gesscher for the purpose of pressure, the extending beds and stretching apparatus of Verrel, Schreger, Lafond, Shaw, Langenbeck, Delpech, Le Vacher, and others, and the various apparatus acting by extension and pressure, as Schmidt's, Jorg's and Von Graefie's, Mr. Lonsdale has added the modified apparatus already referred to in our extracts.

—Chelius remarks, that there is a well-grounded complaint that in many orthopedic institutions the entire treatment is conducted in too mechanical a manner; and that by long continued use of the extending apparatus, with constant rest, the

\* Journ. de Chirurgie, Dec. 1846, p. 368.

† Monthly Journ., May 1847, p. 855.

greatest injury is caused to the whole constitution of the patient: it will be seen that in the treatment now recommended, the object is to supersede this constant confinement, and that the treatment is founded more upon a consideration of the whole circumstances of the case, and less with a view to fulfil one particular indication, however prominently it may present itself.

15. *Dislocations of the Spine*.—In describing the case recorded at page 80 (Art. 54), Mr. Carassus justifies his practice of making no attempt at reduction in these cases; in doing so, he states that about two years ago a man, at the Hôtel-Dieu at Marseilles, after a fall, presented all the signs of a dislocation of the second vertebra, and died during the efforts which were made to reduce it. The editor of the "Gazette" remarks, that it would be highly desirable, for the interest of science, to be made acquainted with the details of this case.

#### § VII.—*Injuries and Diseases of the Integuments.*

16. *Treacle as a Dressing to Burns*.—Mr. Bulley has published a series of cases illustrative of the advantages derived from the application of treacle and water as a dressing to burns.\* The dressing is applied at a temperature of 98° by means of lint thoroughly soaked with it, and renewed night and morning. The action of the remedy, as far as Mr. Bulley has been able to observe, is directly sedative, and its first effects appear to be those of lulling the pain and moderating the inflammation. It also appears to have a tendency to retard putrefactive decomposition, as is clearly indicated by the absence of fœtor in the cases in which it is used. This was remarked, particularly, in an instance in which a burn of the abdomen occupied a surface of 270 square inches. Treacle appears to have been also used by Dr. Greenhow, of Shields, for the same purpose, as long since as 1838.†

—Dr. Payne, of Nottingham, has also published cases illustrative of this treatment, and states that for upwards of 20 years he has adopted it in burns and scalds.‡ In all such cases which come under his notice he orders the treacle to be applied pure on the injured surface and at the natural temperatures; folds of well-aired linen being laid over it, and the dressing allowed to remain for two or three hours at first, when the treacle will be found in a more fluid state, hot to the touch, and the rag saturated with it. The remedy is then reapplied in the same manner, but after the second or third day of the burn, will not require renewing oftener than once or twice daily, and the treacle will now begin to preserve its usual consistence while in contact with the burnt or scalded surface. The time occupied in healing the burn is very much less than in the case where other means are employed. On the whole, Dr. Payne knows of no remedy capable of exerting more beneficial effects in burns and scalds, however severe, than treacle; and is fully persuaded that life might be saved in the most desperate cases by the timely and free application of this invaluable remedy. It acts by effectually excluding the air, and (as appears by the fact of the pain entirely abating or greatly diminishing as soon as it is applied) by abstracting the morbid heat from the part, and thus proving at once sedative, refrigerant, and healing.§

#### § VIII.—*Syphilis.*

17. *Syphilis, Treatment of*.—Dr. F. A. Aran has given an account of Dr. Moij'sisovics' mode of treating syphilis with iodide of potassium combined with iodine, by which he professes to cure the disease in three or four weeks. He gives the iodide in doses of five to twenty grains three times a day, using at the same time a bath made with a drachm of iodine, a drachm and a half of iodide of potassium, and some common salt, the iodine not being added to the water until the patient is in the bath, where he is to remain an hour, and then to get into a warm bed to promote perspiration. This is continued for three days, when some itching of the skin occurs, and the dose of the iodide, having been five grains, is then gradually increased. About the tenth or eleventh day a febrile state arises, with itchings of

\* Prov. Med. and Surg. Journ., June 30, 1847, p. 361.

† Med. Times, May 22.

‡ Prov. Med. and Surg. Journ., July 28, 1847, p. 406.

§ Journal de Pharmacie.

the skin, and a scarlet rash, or an eruption like herpes zoster; this is followed by desquamation, from the 13th to the 21st day, and these taken together indicate that the iodization has reached its maximum. Dr. Moij'sisovics states he has never seen any return of the disease in cases where the eruption and desquamation pursued a regular course. For exostoses, condylomata, and pustules he uses a weak solution of iodine and iodide of potassium, and still weaker local baths, and he employs the same kind of treatment in every variety and stage of syphilis. Dr. Aran remarks that no account is given of cases in which this treatment has failed, and urges the necessity for its merits being more minutely tested.\*

—Mr. Hamilton terminates an article entitled "Some Remarks on the Use of Inoculation in Syphilitic Buboës, as a Guide to their Treatment," with the following summary of conclusions:

1st. That after opening a bubo, the wound, instead of healing, may assume a cancerous appearance.

2d. That the best way of ascertaining its real nature, whether it be virulent or non-virulent, is by inoculation.

3d. That if inoculation produce a specific pustule and ulcer, the patient, besides careful local means, should be subjected to mercurial treatment, as the most effectual and rapid way of healing the sore, and ridding the constitution of the virus.

4th. That if no specific ulcer follow inoculation, the wound of the bubo may be treated by simple local applications.†

18. *Syphilis of the Bones*.—Our extracts contain an article on this subject, being a lecture by Dr. Porter condensed (art. 67, p. 103). In a pamphlet by M. J. Venot, on the tertiary symptoms of syphilis, it is remarked that hypertrophy of the osseous tissue (exostosis and periostosis) and suppuration (caries) are the only generally described effects of this disease, produced on the bones, but M. Venot's clinical observation has assured him that syphilis may equally exercise its ravages on the skeleton by producing *friability*, or rather extreme *fragility* of the bones. The facts are not new, since they are but examples of fracture, occurring on the slightest motion, in subjects affected with confirmed constitutional syphilis: but some authors hold that this friability is a result of the employment of mercury. One of M. Venot's cases was under treatment with iodide of potassium; and in another old case of five years' standing, said to have been treated without mercury, attended with caries of the os nasi, the patient fractured his thigh, and died fourteen days afterwards: on post-mortem examination no effort at consolidation had taken place, and all the bones of the skeleton were in the most friable condition.‡

#### § IX.—*Varia*.

19. *Paracentesis Thoracis for Empyema*.—Dr. John Sevet, of the New York Hospital, records a case in which this operation failed, not from any mistake in the diagnosis of the disease, but from a *false membrane lining the pleura costalis, and so loosely attached to it as to be pushed before the point of the instrument*, so that the cavity containing the pus was not entered at all. Dr. Watson, in his lectures recently published, states, on the authority of Dr. Davies, that the operator should be careful to use a sharp instrument, otherwise the accident of pushing the false membrane before its point might occur. But no cases are referred to in which this accident actually occurred, neither is it stated that it has ever happened. That the dullness of the point of the instrument may be an occasional cause of this accident is, perhaps, Dr. Sevet remarks, partially true in the above case; for in another case which occurred in the practice of Dr. Hyslop, and whom he assisted in consultation, the same instrument was used, and for the moment with the same ill success, notwithstanding that distinct fluctuation existed at the point where the trocar was introduced. The delay of the pus was, however, only momentary; the introduction of a probe, probably by rupturing the false membrane, gave it a free passage.

But a dull instrument is not the sole cause of the accident. That the false mem-

\* Archives Générales, Jan. 1847.

† Dublin Quart. Journ., May 1847, p. 324.

‡ Gazette Méd. de Paris, 6 Fév., 1847, p. 120.



branes, forming the true sac in empyema, are frequently thick and resisting, must have been observed by all in the habit of examining those who die of empyema; but the looseness with which these membranes are sometimes attached to the pleura would not, perhaps, be as readily noticed, unless in connection with the accident we are now considering. In a case that occurred to Dr. Sevet during the present year, the false membranes were not only three or four lines in thickness, but dense and elastic like leather, and yet so loosely attached to the pleura that, by a slight pressure of the forefinger, they could be readily separated in the form of a complete sac.\*

20. *Treatment of Cysts by Iodine Injections.*—M. Callegari has long been an advocate of this treatment: he records cases of encysted tumour of the head and neck cured by it, and recommends the use of the trocar in preference to puncture with a bistoury, as being less liable to produce violent pain, inflammation and supuration.†

21. *Old Dislocation of the Femur on the Dorsum of the Ilium—No false joint.*—Dr. Francis‡ presented to the Manchester Pathological Society the ileum and corresponding femur of a middle aged woman, where dislocation of many years' standing had existed, but how brought about there was no means of learning, the patient being imbecile. It was certain, however, from collateral information from her friends, that the dislocation had existed many years. That part of the head of the femur which rested on the ileum was flattened, but there was entire absence of any appearance of attempt at the formation of a false joint. A partial obliteration of the acetabulum threw further light upon the antiquity of the displacement. Dr. Francis believed this to be third case only on record where dislocation of many years' standing had existed without a more or less perfect false joint.§

22. *A New Method of applying a Ligature to Tumours.*—Professor Fergusson and Mr. Walne have both described this method. It consists in passing a double ligature through the base of the tumour, and then dividing it; a needle with the eye to the point is then threaded with one tail of the ligature, and passed also through the base of the tumour at right angles to the double thread; this tail is withdrawn from the needle, and the eye threaded with the other tail of the double ligature; the needle is then drawn backwards, bringing with it the second ligature, which then passes at right angles to the original double ligature, and through the same channel as the first tail. The ends of the ligatures having been left long enough for tying, there are now two ligatures, forming two figures of 8, each embracing two opposite segments of the tumour, and the surgeon has only to tie the ends of each ligature once in order to command the base of the tumour.||

23. *Treatment of Panaris.*—Dr. Martin, surgeon-in-chief to the Military Hospital at Colmar, has employed, with the greatest success, a modification of M. Serres' method of treating panaris, by friction with mercurial ointment. Dr. Martin's plan is as follows:—Instead of having recourse to the inunctions every three quarters of an hour, and with a small quantity of the ointment, as advised by M. Serres, he recommends them to be made for five minutes at a time, at the same interval, and to be continued for two hours night and morning, the affected part to be covered with a poultice during the intervals. By this remedy, to the exclusion of almost all others, he has obtained the most remarkable success, and does not hesitate to say that he considers mercurial frictions specific in this painful affection.¶

24. *Hydrophobia.*—Mr Ellis, of Dublin, has promulgated the startling doctrine that the saliva of a dog in perfect health, and in a state of tranquillity, when it neither bites nor attempts to bite, may, if applied to a wound, produce hydrophobia in the human subject.\*\*

25. *Salivary Calculi.*—M. Stanski published a memoir in 1846,†† the object of which was to prove that observers have been deceived as to the nature of sub-

\* Brit. Amer. Journ., April 1847, p. 327, from the New York Journ. of Med., Jan.

† Mem. della Med. Contemporanea, Aug. 1846.

‡ Ibid.

§ London Med. Gaz., May 7, 1847, p. 827.

|| London Med. Gaz., June, 1847, p. 195.

¶ Journ. de Med. et de Chirurg. Pratiques, Sept. 1845.

\*\* Brit. and For. Quarterly, Jan. 1847, p. 250.

†† Archives Générales.

stances extracted from the salivary passages: having met with a concretion, the nucleus of which was a tooth, the author concluded that the various calculi met with owe their origin to a similar cause. In the "*Gazette Medicale*" of the 15th of May, 1847, whilst noticing M. Stanski's memoir, doubts are cast upon his conclusions. M. C. Forget,\* having met with two cases of the kind, has made a collection of as many as 39 cases from different authors, and there are doubtless others, many of which have been analyzed without finding any trace of a tooth as a nucleus. M. Stanski's case, which is extremely curious, must accordingly have been an exception, being a foreign body accidentally introduced, and coated with calcareous matter, as occasionally happens in the bladder. These calculi have sometimes been met with in ranula, within the cyst, at other times in Wharton's duct: their composition is for the most part nearly the same, although sometimes the phosphate and sometimes the carbonate of lime predominates, and thus they very closely resemble the tartar which forms around the teeth. In one of M. Forget's cases, he believed he had to deal with a simple inflammation of the sublingual gland, which, on being punctured, discharged pus, followed by a calculus, the presence of which was not suspected: there had been no previous obstruction to the flow of saliva. The calculus was of an irregular ovoid form, and weighed about 44 grains, was formed of irregularly concentric layers, alternately white and grayish, generally very hard, but the most superficial layers most so.

---

Watching the progress of Medicine and Surgery, we cannot avoid being struck with the fact that the instruments of physical science are becoming progressively more applicable in the diagnosis and treatment of injuries and diseases: this is illustrated in our present Report, and the period appears to be gradually approaching when many of the inert and useless drugs and preparations now in use, the remnants of mystical medicine, must be discarded from our surgeries and dispensaries, and their shelves replenished with the microscope, the stethoscope, the test-tube, and the blow-pipe, the clamp or compress, the inhaler, the electro-galvanic apparatus, and other instruments of science. With a more extensive and more accurate knowledge of the laws of vitality, and of the action of physical and chemical agents on the living system, a more rational system of medicine will thus become generally prevalent, to the honour of those who follow it as a profession. So soon as our records of medicine and surgery show that, in its full scope, practical medicine is based upon scientific and philosophical principles, and that our rationale of health and disease, our therapeutical indications and rules of art, are founded upon induction as well as experience, then will the line of demarcation between the pretender and the qualified practitioner be indelibly stamped; the phantasies of magnetism and homœopathy will vanish: he who is not of the profession will be out of it; and—what, notwithstanding the dreams of enthusiasts, has never yet happened since the world began.—the people will highly and justly estimate the legitimate professors of the healing art.

---

## OPHTHALMIC SURGERY.

As no general Report on Ophthalmic Medicine and Surgery has been made since the commencement of the "Half-Yearly Abstract," we shall feel it incumbent upon us to render the present as comprehensive as our limits will allow. Numerous works have been published during the last few years on ophthalmic medicine, but it is neither consistent with our design, nor would it be advantageous, to make any further reference than to such as have reached us of very recent date. The most important of these, on the general subject, is unquestionably the "*Traité Théorique et Pratique des Maladies des Yeux*," by Professor L. A. Desmarres, an octavo volume of 900 pages, emanating from the Paris press of 1847. We have also before us a very excellent "Manual of the Principles and Practice

\* *Gaz. Med.*, July 24, 1847.

of Ophthalmic Medicine and Surgery," by Mr. T. Wharton Jones, bearing the same date; an Essay "On Cataract and its appropriate Treatment," by C. G. Guthrie; an Essay "On Cataract, Artificial Pupil, and Strabismus," by Dr. Brett; "Practical Remarks on Near Sight, Aged Sight, and Impaired Vision," by Mr. W. W. Cooper; a very interesting "Report on the Progress of Ophthalmic Surgery for 1846," by Mr. W. R. Wilde; and a great variety of monographs, and cases, observations, reviews and essays, on various subjects embraced in this department of medical science, contained in the British and foreign periodical journals.

—Desmarres has adopted a strictly anatomical classification of diseases of the eyes. The following table of the primary divisions of this author's treatise will indicate the scope and arrangement of the subject:

<p>PART. I.—<i>Diseases of the Eyelids.</i></p> <p>CH. 1. Congenital or acquired deformities.</p> <p>2. Inflammations of the eyelids.</p> <p>3. Tumours of the eyelids.</p> <p>4. Syphilitic affections of the eyelids.</p>	<p>CH. 10. Diseases of the ciliary body.</p> <p>11. Diseases of the retina.</p> <p>12. General diseases of the globe of the eye.</p> <p>13. Functional derangements of vision.</p> <p>14. Diseases of the muscles of the eye.</p> <p>15. Diseases of the semilunar membrane, and of the caruncula lachrymalis.</p>
<p>PART II.—<i>Diseases of the Globe of the Eye.</i></p> <p>CH. 1. Diseases of the conjunctiva.</p> <p>2. Diseases of the cornea.</p> <p>3. Diseases of the sclerotica.</p> <p>4. Diseases of the anterior chamber.</p> <p>5. Diseases of the iris.</p> <p>6. Diseases of the capsule.</p> <p>7. Diseases of the crystalline lens.</p> <p>8. Diseases of the vitreous body.</p> <p>9. Diseases of the choroid membrane.</p>	<p>PART III.—<i>Diseases of the Lachrymal Apparatus.</i></p> <p>CH. 1. Diseases of the lachrymal gland.</p> <p>2. Diseases of the puncta and lachrymal canals.</p> <p>3. Diseases of the lachrymal sac and nasal canal.</p>

The arrangement adopted by Mr. Wharton Jones is very different; his Manual consists of the following chapters:

I. Sect. 1. Ophthalmoscopy, or exploration of the eyes, in order to a diagnosis. Sect. 2. Application of remedies to the eyes or their neighbourhood, and performance of minor operations on them. II. Ophthalmic inflammation. III. Sect. 1. Dropsies, tumours, cancer, &c., of the eyeball. Sect. 2. Cataract. Sect. 3. Operation for artificial pupil. Sect. 4. Congenital defects of the iris and pupil. IV. Sect. 1. Abnormal states of the optical refractions and adjustments of the eye. Sect. 2. Vision of objects in and on the eye. V. Amaurotic affections. VI. Loss of correspondence of the sensation and movements of the two eyes. VII. Diseases of the eyelids. VIII. Sect. 1. Diseases of the conjunctiva. Sect. 2. Diseases of the semilunar fold and lachrymal caruncle. IX. Diseases of the lachrymal organs. X. Diseases of the orbit. XI. Injuries of the eye.

In collating the various papers for the purpose of bringing the more important materials before our readers, we propose to follow, for the most part, the more strictly anatomical arrangement adopted by Desmarres.

The "Traité Théorique et Pratique" opens with a very full account of ophthalmoscopy, or the principles which should guide the surgeon in examining the eyes of ophthalmic patients, comprehending a succinct statement of the phenomena every structure comprising the eye presents naturally, with illustrations, under each head, of the more frequent morbid appearances. In order that the readers of the "Abstract" may understand wherein this work most essentially differs from the principles and practice of ophthalmic surgery long taught in this country, and adopted mainly from the German school, we may state at the outset, that Desmarres, after directing attention to the undoubted fact, that it is impossible to isolate the various inflammatory diseases of the eye, a point, by the by, much insisted upon by Dr. Jacob,\* and that although we retain the term *iritis*, for in-

\* On Inflammation of the Eye, Dublin Medical Press, 1846.



stance, there is no case of this disease in which five or six membranes are not involved; following his anatomical arrangements he altogether repudiates and discards the specific nature of the different ophthalmias, and such terms as *rheumatismal ophthalmia*, *scrofulous ophthalmia*, *arthritic ophthalmia*, &c., adopted to so inconvenient an extent by the German ophthalmists; he considers that there are no anatomico-pathological characters by which these complications of the various inflammations of the eye can be distinguished. Such complications are only to be determined by a general examination of the patient, and by the modifications which the particular constitution produces on the course of the inflammation. In a therapeutic point of view, real mischief has been done by designating affections of the eye according to the general predisposition, even when this predisposition or complication really exists; in support of which assertion Desmarres quotes Weller, who, while he admits specific ophthalmias, remarks that "the results of the treatment of these affections would not be favourable if the physician began by prescribing generally for the arthritis, scrofula, &c., since the organ might be destroyed even before those remedies which are most indicated could so affect the general system as to relieve the disease with which the eye is affected." When inflammation of the eye exists, in particular constitutions, Desmarres admits and describes the modifications produced in the course, duration, prognosis, and treatment, and which follow as a consequence of these complications, but he denies in toto that they have any pretensions to be classed as distinct species, or even varieties of disease. This author's views on this head will be amply illustrated in the present Report. That our readers may be apprised of one or two of the leading features in Mr. Jones's Manual also, which may be taken as representing, as far as it goes, the state of ophthalmic medicine in this country, we may mention that in the second chapter, which comprises the whole subject of inflammation of the eye, whatever the structure affected, and of its sequelæ, a long account is given of inflammation in general, in which the more recently observed microscopical phenomena of the process are described. Upon these the author frames a theory of inflammation, which, if criticism came within the scope of this work, we should feel disposed to discuss very fully; but since it does not, we are only at liberty to remark, that in a Manual intended as a text-book for students, and as a book of reference to practitioners, it is a little too much to adopt such an hypothesis as that the exciting cause of inflammation primarily exalts the activity of the sensitive nerves, and secondarily, by reflex action, paralyses the motor nerves of the capillary vessels, and thus, by a suspension of nervous influence, produces a retardation of blood; and to adopt such an hypothesis as fundamental, which, notwithstanding Henle's authority, is doubted by some pathologists, and disbelieved by others\*. Mr. Jones distinguishes and designates the species and varieties of the ophthalmiæ principally by—1, the part which is the chief seat of the inflammation; 2, the co affected structures; 3, the exciting cause; 4, the state of constitution or constitutional disease; 5, the result. Hence we find in his nosography not only *scrofulous* and *rheumatic* ophthalmia, for instance, but *scrofulo-catarhical*, *catarrho-rheumatic*, *scrofulous posterior internal* and *arthritic posterior internal* ophthalmia, following most of our standard works, and especially those of the Germans, in their minute specific distinctions of the various inflammatory affections of the eye, which we have already stated Desmarres' work has the merit or the demerit of discarding.

## A.—DISEASES OF THE EYELIDS.

### § I.—Congenital or Acquired Deformities of the Eyelids.

These affections, as enumerated by Desmarres, are as follows:—1. *Ablepharon*; 2. *Coloboma*; 3. *Anchyloblepharon*; 4. *Symblepharon*; 5. *Plamosis*; 6. *Lagophthalmos*; 7. *Epicanthus*; 8. *Ptoxis*; 9. *Entropion*; 10. *Ectropion*; 11. *Trichiasis*; 12. *Absence or Fall of the Eyebrows*; 13. *Contusions and Wounds of the Eyelids and Eyebrows*.

The first and second Volumes of the "Half-yearly Abstract"† contain a condensed account of Mr. Wilde's papers on malformations and congenital diseases of the

\* P. 50.

† P. 71.

‡ Vol. i. p. 113; Vol. ii. p. 92.

organs of sight, from the Dublin Journal. Desmarres does not appear to be acquainted with Mr. Wilde's labours, since we do not find this gentleman mentioned through the whole work, which might have been rendered more complete had the author availed himself of his cases and observations.

1. *Epicanthus*.<sup>\*</sup>—Professor Von Ammon, of Dresden, first noticed and described this deformity, to which he attached the name it now bears. It consists in the existence of a semilunar fold of skin, whose concavity is turned outwards, and which sometimes advances so far as to cover the inner portion of the cornea. This fold is united at its convexity to the skin of the nose, at its superior extremity to the skin of the brow, and at its inferior extremity to the skin which covers the lower and inner edge of the base of the orbit. It results from this disposal that vision laterally is possible in one eye only, the other conceals itself in the internal angle under the cutaneous fold, which at the same time masks the caruncula. From the side opposite to the epicanthus we recognise that it is just so far distant from the eye as the latter is placed deeply in the orbit: so that it may be easy to pass the extremity of the finger between the globe and the posterior face of the fold. Epicanthus is congenital or acquired, monocular or double.

The congenital, according to M. V. Ammon, is simple, or complicated with paralysis or with strabismus. When acquired it may be divided, according to Desmarres, into permanent, the result of an alteration of the skin, of a burn, of a wound, or consecutive to a caries of the orbit, &c.; and into temporary when it is the result of an inflammation of the integuments (erysipelas, purulent ophthalmia, &c.)

Desmarres gives, from the "*Annales d'Oculistique*" (tom. vi. p. 236), a curious and rare case of temporary epicanthus.

"The epicanthus did not appear until the fifth day of a purulent conjunctivitis, at the moment when the inflammation was declining. During three days it advanced little by little towards the cornea, to such an extent that, when the child was looking straight before him, the middle of the semilunar fold formed by the skin covered not only all the inner portion of the sclerotica, but also about a line in extent of the cornea. Having made this progress for two days, the epicanthus remained stationary; when the fold began gradually to retrograde towards the inner angle, so that by the fourteenth day it did not cover more than the interior third of the caruncula lachrymalis. Finally, towards the twentieth day, the malady had disappeared, without leaving any trace."

The treatment of epicanthus is surgical or medical, according to its cause. When congenital, and exempt from complications, the operations of rhinoraphy proposed by M. V. Ammon, should be practised, which consists in seizing, on the dorsum of the nose, either with the fingers or forceps, a vertical fold of skin, sufficiently large to cause the deformity to disappear, and cutting it out with scissors. The loss of substance on the nose, of the form of a myrtle-leaf, is to be of variable extent, according to the size of the epicanthus. The union is effected by means of pins placed transversely, and sustained by the twisted suture.

This operation completely remedies the deformity; but should the epicanthus be monocular, it will suffice to take out the exuberant semilunar portion of skin by means of scissors, whose convexity will be calculated by that of the fold to be cut away, and the cicatrix consequent thereon will be hidden in the inner angle of the eye operated on.

Mr. Jones considers that it is seldom that epicanthus impedes the movements of the eyelids so much as to render any operation necessary.†

2. *Ptoſis*.—*Blepharoptosis*.—*Falling of the Upper Eyelid*.—Mr. Jones arranges the various cases of ptoſis under four heads: 1st, from paralysis of the third pair of nerves: 2d, from injury of the levator palpebræ; 3d, from extension or relaxation of the skin, or of the whole substance of the eyelid; 4th, congenital.‡ Desmarres recommends, for the cure of ptoſis depending upon extension or relaxation of the skin, cutting out a longitudinal fold from the middle of the transverse diameter, and the subsequent employment of sutures, although the latter were condemned by Scarpa and Menzel. He appears to be unacquainted with Mr. Hunt's proposal for the rectification of the deformity when occasioned by injury of the levator

<sup>\*</sup> Desmarres, lib. cit., p. 39.

† Lib. cit., p. 443.

‡ Lib. cit., p. 441.

muscle, which consists in the removal of a transverse fold of integument from the eyelid, of such an extent and from such a place that when the edges of the wound become united, the eyelid is attached to the corrugator muscle and to that portion of the skin of the eyebrow upon which the occipito-frontalis acts; so that the action of this muscle is substituted for that of the levator palpebræ.

Desmarres treats of ptosis from paralysis in his fourteenth chapter, "On Diseases of the Muscles of the Eye;" but we prefer reverting to the subject in this place. According to Mr. Jones, this form sometimes comes on after exposure to cold and damp, and may be properly viewed as of a rheumatic character (p. 397); but it may depend upon congestion, extravasation, effusion, tumours, &c., consequent to injuries of the head. This paralysis of the upper eyelid is the subject of a statistical memoir by Mr. J. J. France,\* who has furnished the profession with statistics of several cases, the first twelve of which present all the forms of this malady. It occurs equally in males and females, and is met with most frequently from twelve to twenty-eight years of age, and among those who by profession are exposed to fatiguing exertions, particularly at a high temperature. The causes could be determined in some only of the cases. One patient became affected after exposure to the sun; another after working at a gas furnace; a third, after a rather long march; a fourth, after the feet remaining in cold water for a long time; a fifth, in consequence of a blow on the head; a sixth, from a general cancerous affection. In these twelve patients, ten presented, at a period varying from a few days to some months, before the development of the paralysis, cerebral symptoms differing much in intensity; as headache, vertigo, tinnitus aurium, deafness, &c.; and in some cases there were signs of a deeper-seated affection of the head.

It occurs nearly as often in one eyelid as in the other. In nine of the cases the paralysis was limited to the motor nerve; in the sixteenth case the optic nerve was equally involved; in the eleventh there was almost complete paralysis of the optic and of the common motor-ocular nerve of the right side; this case was produced by a blow on the side of the head, and coincided with complete paralysis of the rectum and bladder; in the twelfth case all the nerves of the orbit were paralysed, which occurred without any cerebral symptoms, but there was disease of the post and sub-maxillary glands, and very probably the facial nerve, the inferior maxillary nerve, all the nerves of the orbit and the superior maxillary were compressed by a prolongation of the tumour into the sphenomaxillary sinus. Inflammation of the conjunctiva and destruction of the cornea, in this case, were probably owing to paralysis of the fifth pair.

The paralysis extended in all the cases, except one, over all the branches of the nerve. There was loss or disturbance in the adduction, elevation, and depression of the globe of the eye, as well as paralysis of the eyelid. The paralysis of the lid was complete in eight cases, incomplete in four. The paralysis of the globe, that is to say, in the branches of the common motor oculorum, complete in five cases; incomplete in seven. The pupil was almost constantly dilated, which proves the propagation of the disease to the ciliary nerves by the intervention of the ophthalmic ganglion. Still the sight, in general, was only slightly disturbed, if the diplopia resulting from the loss of parallelism of the ocular axis be excepted.

In reference to treatment, caution is necessary as to bleeding. Two patients bled largely derived but little benefit, while cupping, mercurials, purgatives, blistering the nape of the neck, &c., were followed by favourable results. The paralysis of the motor oculorum is sometimes of dangerous tendency: for of the twelve cases, one was followed by a fatal result, and seven were not cured, or only incompletely cured; four were completely cured: three in from fifteen to twenty-eight days, by the employment of powerful revulsives; the fourth by the ingenious operation resorted to by Mr. Curling, Mr. Hunt, of Manchester, and others, which consists in putting the paralysed fibres of the levator muscle of the upper eyelid under the command of the occipito-frontalis muscle. For which purpose, as already stated, a fold of skin is cut out of the lid, and the wound united with a suture. The lower part of the lid contracts adhesions with the corrugator muscle and also with the occipito-frontalis, and is thus brought under the command of the latter.

\* Guy's Hosp. Rep., and Encyclog. des Sciences Méd., Nov. 1846, p. 285.



3. *Entropium.*—*Inversion of the Eyelids.*—Mr. Wilde appears to have investigated the causes of this distressing disease with great care, and with a view to point out its diagnosis at a much earlier period than usual. He remarks that, when we look at a healthy eye, on a level with our own, the cilia of the upper lid should project so much forwards, that we should see but the dark line of fringe which their points form. If the eye be directed downwards, and the lid fall a little, the upper surface of these hairs comes into view. The eyelid forms two folds; the superior, large, flexible one, which is carried inwards by the action of the levator palpebræ; and the inferior, lesser one, which is generally about three-eighths of an inch deep, and to which the integuments are intimately attached.

When the lid drops, or is closed by a voluntary effort, the superior, large, loose, and flexible fold becomes obliterated. Now in persons labouring under the incipient entropium, long before any inversion or distortion of the lashes has taken place, the lower fold becomes preternaturally developed. And, moreover, if we examine such an eye in profile, we shall find that this fold has become not only more developed, but that its curvature, which in the normal state is but slightly convex in the infero-superior direction, has become preternaturally increased. This vicious bend of the inferior fold of the lid is often of years' standing before it is perceived. When we evert the lid the cause becomes manifest; immediately behind the line of the Meibomian glands we perceive a deep curve or hollow in the cartilage, running along the entire length of the lid.

This sulcus or depression in the cartilage has invariably a shining, tendinous appearance, and several conjunctival vessels may be seen running into it; and as the disease advances it has the appearance of a deep and rugged cicatrix, not unlike those marks which we perceive upon the inner surface of a lid which has been cured of granulations. All this time the conjunctiva lining the cartilage may be perfectly smooth, and scarcely more vascular than natural, while the tissues of the eye itself may never have suffered from disease. Chronic ophthalmia is, no doubt, at times a cause of entropium, but, the author believes, a much less frequent one than is generally supposed. Mr. Wilde has lately seen several cases of inversion, both in the incipient and fully-developed stage, in which there never had been any inflammatory affection of the ocular tunics. When the disease is fully established, this internal sulcus becomes more deeply developed. The subjective symptoms are but very trifling; the patient complains of little or no uneasiness until one or more of the lashes touch the globe. At times persons labouring under the incipient form complain of a tightness of the lid, and say that when they move it, they feel as if it scraped the eye. This tightness, however, is not caused by any shortening of the transverse length of the lid, but by its increased curvature from above downward.\*

—Desmarres gives a very minute account of this affection, which may either be partial or complete, and of which there are many varieties depending upon different conditions of the part; he also enumerates a great many remedies,† including the application of topical astringents, bandages, the actual cautery, as recommended by Celsus, and several kinds of operation. The latter are described most minutely, and each operation is adapted to the variety of the affection for which it is intended as a remedy. Mr. Wilde states that neither caustics nor astringents effect any good in the early stage, but he thinks he has succeeded in arresting the progress of entropium by the application of nitric acid to the integuments covering the fold externally.

4. *Entropium.*—*Eversion of the Eyelids.*—It would occupy half our space to describe the different operations performed by different oculists to remedy the various forms of entropium. Desmarres gives minute particulars of operations performed by Antyllus, Dieffenbach, Adams, Celsus, Chelius, and Von Ammon, most of which are well understood by the ophthalmic practitioner. Mr. Jones is also particularly full on this subject; in entropium from contraction of the skin, in consequence of bad cicatrices, &c., after mentioning some of the operations just referred to, and the plan of transplantation of the skin performed successfully, in some cases, by Dr. Fricke, of Hamburg, Dr. Mackenzie, and others, Mr. Jones describes his own:—

\* Dublin Quart. Journ., Feb. 1847, p. 224.

† Lib. cit., p. 50.

5. *Operation for the Cure of Ectropium.*—The peculiarity of the plan consists in the following particulars:—The eyelid is set free by incisions made in such a way, that when the eyelid is brought back into its natural position, the gap which is left may be closed by bringing its edges together by suture, and thus obtaining immediate union. Unlike the Celsian operation, the narrower the cicatrix the more secure the result. The flap of skin embraced by the incisions is not separated from the subjacent parts, but advantage being taken of the looseness of the subcutaneous cellular tissue, the flap is pressed downwards, and thus the eyelid is set free. The success of the operation depends very much on the looseness of the cellular tissue. For some days before the operation, therefore, the skin should be moved up and down, in order to render the cellular tissue more yielding.\*

On the 22d of February, 1846, Mr. Jones operated on the *left* upper eyelid. Two converging incisions were made through the skin, from over the angles of the eye upwards to a point where they met, somewhat more than an inch from the adherent ciliary margin of the eyelid. By pressing down the triangular flap thus made, and cutting all opposing bridges of cellular tissue, but without separating the flap from the subjacent parts, Mr. Jones was able to bring down the eyelid nearly into its natural situation, by the mere stretching of the subjacent cellular tissue. A piece of the everted conjunctiva was snipped off. The edges of the gap left by the drawing down of the flap were now brought together by suture, and the eyelid was retained in its proper place by plasters, compress, and bandage.†

The following is set forth in the Journal quoted from as new, and we find Desmarres remarking that he has no doubt ectropium from disarrangement of the fibres of the orbicularis muscle is very common.

6. *New Mode of Operating for Ectropion, by Dr. Blasberg.*‡—This writer ascribes the formation of ectropion not to those various causes which are generally considered as apt to produce it, but rather to a peculiar condition of the orbicular muscle. He is inclined to think that the proximate cause of ectropion consists in a prevailing contractile power in the fibres of the orbicularis which surround those that form the ciliary portion of the muscles. In a man, æt. 50, with sarcomatous ectropion, Blasberg, finding a furrow below the ciliary margin of the lower lid, which became deeper every time the patient closed his eyes forcibly, made a vertical incision in the lid, and finding some of the fibres of the orbicularis much contracted, he divided them, and cured the ectropion. In another case he made a horizontal incision, about three quarters of an inch long, and having exposed the orbicularis, he divided at three different places some of its fibres which were most developed, and which were situated at about a line below the ciliary margin. In a short time the ectropion disappeared.

7. *Blepharoplasty.*—In an article with this title, Desmarres gives an account of the various modes of performing those operations, the object of which is to repair a loss of substance in the upper eyelid, or to cure the various deformities produced by entropium and ectropium. This operation has been performed by Graefe (1817), Fricke (1829), Jüngken, Rust, Peters, Langenbeck, Blasius (in Germany), Hyern (in Spain), Blandin, Velpeau, Bérard, Jobert de Lambelle (in France), and Jones (in England). Desmarres states that in most cases it has diminished the deformity, but that it rarely destroys it, especially when performed on the upper eyelid; and that it should never be resorted to unless some real advantage is to be secured, since it implies extensive incisions, the minute dissection of a large surface, and numerous sutures. The various operations may be arranged in three classes. 1st. The method of Fricke, by torsion of the flap. 2d. The method of Dieffenbach, by inclination of the flap. 3d. The method of Jones, by extension of the flap. Mr. Jones's method, which is the most novel, has been described.§

## § II.—Inflammation of the Eyelids.

The varieties of inflammation of the eyelids admitted into Desmarres' nosology are, 1, *Blepharitis*, or simple inflammation; 2, *Ciliary Blepharitis*; 3, *Erysipelatous Blepharitis*.

\* *Ophthalmic Medicine and Surgery*, p. 418.

† *Gaz. Med. di Milano*, Feb. 27, 1847.

‡ *Ibid.*, p. 419.

§ *Lib. cit.*, p. 418.

8. *Ciliary Blepharitis—Glandulo-ciliary Inflammation of the Eyelids—Scrofulous Blepharitis, &c.*—This inflammation has received various names from different writers, and, according to the present author, it has been treated of fully, by none. It is only at its commencement that it is essential and well marked; subsequently it becomes complicated with diseases of the eye itself. It comprises the *psorophthalmia*, *ophthalmia tarsi*, *scrofulous ophthalmia tarsi*, *tinea ciliaris*, *tylosis*, or *callosity of the eyelids*, and many other varieties differently designated. Desmarres describes its anatomical symptoms in their first, second, and third degree, with their complications, including glandular abscess, obliteration of the orifices of the Meibomian glands, calculi of the Meibomian glands, ulcers, callosities, chalazions, and diseases of the eyelashes; its physiological symptoms; its cause and duration; etiology; differential diagnosis; terminations; treatment. Amongst the internal causes of this affection the scrofulous constitution plays a principal part, although it may occur in persons enjoying the best of health. It can be confounded with no other affection, and having the greatest affinity to the granular ophthalmia, the differential diagnosis of the two diseases is still easily made.

Too much reliance must not be placed on general treatment, but recourse must be had to local applications, for the purpose of obtaining immediate relief. If ever a very slightly granular state of the conjunctiva exists, at the same time that astringent collyria are employed, the surface of the granulations must be touched with sulphate of copper or nitrate of silver. These remedies should also be applied to the free edge of the eyelid, the dried crusts at the base of the eyelashes being softened and removed as fast as they form, which may be effected with emollient cataplasms. If this simple treatment is persevered in, the redness diminishes, and if organic changes have not taken place, the normal condition will be re-established. Every kind of treatment fails if the crusts are not removed; no ointment or application of any kind can be of the slightest use if not applied to the surfaces covered by the crusts, so that such remedies should not be resorted to until after the inflammation is subdued, or only in the short period which elapses between the removal of one crust and the formation of another. When the healthy state of the lid is nearly re-established, red precipitate ointment and analogous preparations may be employed with advantage.

All these means are ineffectual when the affection has reached its third degree, and numerous deep ulcers run into each other, attended with fistulous passages leading to the Meibomian glands, in which stage the eyelashes, nearly or completely destroyed, ride across each other: a more energetic treatment is then necessary, the ulcerations must be separately cauterized with solid nitrate of silver, very finely pointed, and dipped in water; every second day repeating the cauterization of any ulcerations which may have escaped: a stilet charged with caustic may also be inserted into the fistulous passages. Marked amelioration, and frequently a complete cure, follows the sustained employment of these remedies. When, in spite of all, the eyelid remains tumefied, multiplied punctures may be made on its free edge, and repeated two or three times a week. Desmarres has cured a good number of cases by this measure, when the patients were willing to submit to the pain occasioned by the punctures.

9. *Erysipelas of the Eyelids—Erysipelatous Blepharitis.*—Desmarres remarks that it would be easy for a person who has not studied the subject to mistake erysipelas of the eyelid, with supuration of the subjacent cellular membrane, for a purulent ophthalmia, if, as frequently happens, the Meibomian glands and sebaceous follicles are at the same time secreting a muco-purulent liquid; yet it is only necessary to examine the under surface of the eyelid, the neighbouring inflamed parts, and the eye itself, by means of an elevator, in order to distinguish the difference. One of the most unfavourable terminations of erysipelas of the eyelids is the formation of an abscess in the cellular tissue of the orbit—death may be the consequence. A less serious, but more frequent complication, is the extension of the inflammation to the conjunctiva, which constitutes the *erysipelatous ophthalmia* of some authors, but which Desmarres considers ought not to find a place in our nosologies. He considers that the descriptions given by Mackenzie, Middlemore, Beer, Weller, and others, are insufficient to establish a special inflammation of the eye, of this nature. Sechel's description, who thinks erysipelas of the eye may develop itself independent of any affection of the eyelid or face, confirms



Desmarres' opinion, and he considers that Velpeau has done great service to ophthalmic medicine, by refuting the doctrine generally admitted.

—Wharton Jones\* states that erysipelatous ophthalmia is not of frequent occurrence. Infiltration of serum into the substance of the conjunctiva and subjacent cellular tissue, with serous chemosis, the cornea appearing half buried with it, appears to be the most remarkable objective symptom; but Desmarres remarks that the chemosed state of the conjunctiva, and its infiltration with a serous fluid, occur in simple serous chemosis which accompanies granular ophthalmia, proving that erysipelas of the eye, either with or without erysipelas of the eyelid, has no existence, since its distinctive characters are common to other affections. (p. 120.)

In severe cases of erysipelas of the eyelids, Desmarres advocates the most energetic local treatment, consisting of deep transverse incisions extending from one side of the eyelid to another, and if there is reason to fear suppuration of the orbit, they may be carried through the eyelid, between the eye and the orbit, and the most fatal results may thus be prevented. In some exceptional cases, where phlegmon of the eye is the consequence of the disease, a bistoury may be plunged into the inferior part of the sclerotica, by which the spontaneous bursting of this membrane, or of the cornea, may be prevented, and the patient's eye or his life saved.

### § III.—*Tumours of the Eyelids.*

These are either—1. Inflammations; including *Hordeolum*, the common sty, *Furunculus* and *Anthrax*. Or, 2. *Non-inflammatory*; including *Echymosis*, *Œdema*, *Warts*, *Sebaceous Vesicles* and *Miliary Tuberculi* at the edges of the eyelids, *Cysts*, *Chalazion*, *Scirrhus* and *Cancer*, and *Erectile Tumours*.

10. *Cysts of the Eyelids*.—Desmarres states that nothing is less true than the general opinion of authors, that it is useless to attempt the resolution of encysted tumours of the eyelids, and, in spite of the opposing authority against it, medical treatment should in the first instance be resorted to. He has obtained their dissolution by mercurial frictions repeated regularly night and morning, replaced from time to time by an ointment of ioduret of potassium or of lead; in some cases also acupuncture has been added to these remedies, and the resolution has been effected rapidly, although in others, the whole of these measures failed. Mr. Wilde has given a fair trial to the ointments recommended by Desmarres for the dispersion of tumours in the palpebræ, but in his hands they have invariably proved inefficacious.†

To obviate the inconveniences which the operator experiences, in dissecting out these tumours, from the rapid flow of blood, Desmarres has invented an instrument, by the use of which all hemorrhage may be prevented. It is essentially a pair of forceps, one branch of which terminates in a metal plate to be placed under, and the other in a ring to be placed over the eyelid, the ring to include the tumour. There is a screw at a convenient distance from the termination of the branches, by which the ring can be screwed towards the plate, and when adjusted on the eyelid, the circulation in the tumour may be thus completely arrested. With the use of this instrument the dissection is effected as easily as on the dead body.

### § IV.—*Syphilitic Affections of the Eyelids.*

These consist of—1. *Syphilitic Ulcers*; 2. *Condylomata*; 3. *Syphilitic Eruptions*.

Having thus placed before our readers some of the most interesting materials of recent date, relating to the diseases of the eyelids, with a few of Desmarres' more original observations, we cannot better conclude this part of the subject, than by generalizing some remarks made by the author in reference to the various operations for ectropion. With respect to these, as well as the other numerous operative proceedings now resorted to, especially by continental oculists, although frequently trivial in themselves, and generally unattended by any serious complication, yet occasionally, and especially when a considerable portion of the palpebral integuments are raised, serious accidents occur; as erysipelas, phlegmonous

\* Lib. cit., pp. 74, 118.

† Report in the Dub. Quarterly Journal, Feb. 1847, p. 228.

ophthalmia, &c., becoming the most important part of the case, and sometimes resulting in cerebral symptoms of the greatest danger. It is therefore necessary, both before and after the operation, to put the patient in the best possible condition to avoid these unfortunate results; and it should be added, that it may be taken as a principle deduced from the opinions of the best modern ophthalmic surgeons, that such operations should never be undertaken except where they are clearly indicated, and the patient is to derive from them some very decided beneficial result.

## B. DISEASES OF THE GLOBE OF THE EYE.

### § V.—*Diseases of the Conjunctiva.*

This chapter comprises: 1. *Conjunctivitis*; 2. *Granulations*; 3. *Pannus*; 4. *Pterygium*; 5. *Pinguecula*; 6. *Serous Chemosis*; 7. *Phlegmonous Chemosis*; 8. *Foreign Bodies* in the Conjunctiva; 9. *Echymosis*; 10. *Dacryolithes*—Calcareous Concretions; 11. *Xerophthalmia*—Dryness of the Conjunctiva.

11. *Conjunctivitis*.—The following is Desmarres' simple and practical arrangement of the different forms of inflammation of the conjunctiva:

Conjunctivitis.	1. Pure or phlegmonous.		
	2. Pustular.		
	3. Granular or catarrhal	{ Contagious. Non-contagious. Miasmatic.	{ Erysipelatous. Variolous. Morbillous. Scarlatinous.
		{ Exanthematic	
	4. Purulent.	{ Of new-born infants. Gonorrhœal. Egyptian.	

*Pure Conjunctivitis* may terminate in resolution, or become chronic or complicated with serous chemosis, corneitis, phlegmonous chemosis, iritis, capsulitis, or hypopyon. It may become a general ophthalmitis with retinitis, fever, and delirium, and may result in a complete destruction of the eye or of any of its most important membranes; or, under more fortunate circumstances, resolution may occur as completely as in the original and simple affection.

*Pustular Conjunctivitis* is the early stage of the serofulous or phlyctenular ophthalmia of other authors, and as such it deserves peculiar attention; the early formation of the phlyctenulæ are admirably described. So long as the disease is limited to the conjunctiva, Desmarres remarks that it is extremely mild, rarely continuing longer than from eight to fifteen days, and terminating in resolution; although occasionally the pustules which occur at the edge of the cornea pass into ulceration; it is when the disease extends itself to the cornea and other membranes that it becomes so severe and obstinate, new symptoms being added, and new indications of treatment set up. Desmarres remarks that this might be designated the ophthalmia of early age, for it undoubtedly occurs most frequently in children. The same causes which give rise to simple or granular ophthalmia in the adult, produce pustular ophthalmia in lymphatic and feeble children; serofulous children are most predisposed to it, and it is rarely met with in adults of any constitution.

Although we shall be compelled to anticipate some part of our subject belonging to future sections, we cannot do better than place before our readers, under this head, a condensation of Dr. Jacob's views respecting serofulous ophthalmia.

12. *Serofulous Inflammation of the Eye*.—Dr. Jacob, in describing this affection as it actually occurs, states that the eyeball is sometimes the seat of a species of inflammation justly entitled to the denomination of serofulous, from its symptoms and results; but, he says, it may be assumed that it is not so much a local outbreak of serofula as an inflammation caused by exposure to cold, and modified by that disease, and thus at the outset we observe that there is not so great a

difference of opinion between Dr. Jacob and Desmarres; the former proceeds to say that while it cannot be denied that the eyeball is sometimes the seat of scrofulous disease, it may at the same time be doubted whether it is so frequently attacked by it as is generally supposed: for in many cases assumed to be of this nature there is really no evidence of the existence of any such malady, either in the system at large or in the part affected. In treating of scrofulous inflammation of the eye, it becomes necessary to inquire whether the practitioner can form a correct diagnosis from the changes in vascularity, diminution of transparency, or alteration in colour of the structures engaged. The common practice of assuming that certain forms of inflammation of the eyeball and conjunctiva are scrofulous, because the patient does not appear to be in a vigorous state of health, or because the disease does not yield to depletion or other usual remedies, leads to erroneous views and unsuccessful practice, and should be abandoned. No inflammation of the eye should be pronounced scrofulous unless the local disease or the constitutional peculiarities fully justify it.

The object should be to determine how far the treatment is to be modified in consequence of constitutional diathesis. To establish the existence of scrofulous disease with this view, it may not be necessary to have evidence of the presence of scrofulous tubercle, or other conclusive proof of the active progress of the malady: but there should be some more characteristic marks of it than those afforded by the tint of skin or the general formation of the body. A thick upper lip, brawny prominent cheeks, and tumid nose, accompanied by coarse, greasy, and dingy discoloured skin, will, when present, enable the practitioner to form an estimate of the state of the constitution: and if cutaneous excoriations at the angles of the mouth and margins of the nostrils, as well as at the edges of the eyelids and about the ears be also present, causing enlargement of the lymphatic glands beneath the chin and angles of the jaws, little doubt need remain of at least a predisposition to the specific malady. Extreme transparent delicacy of the cutaneous surface, permitting the subjacent blue veins to appear ramifying beneath it, and displaying a florid brilliancy of colour of the cheeks and lips, is evidence, if not of that diseased state of the system, at least of a very feeble state of the constitution, entailing great liability to destructive local inflammatory action.

Many who pronounce an inflammation of the eye to be scrofulous, probably do not mean to assert that there is scrofulous deposit in the lymphatic glands, or any other form of local disorganization or constitutional condition undoubtedly of this nature: they probably only mean to intimate that the inflammation is of peculiar character, because the subject of it presents certain appearances of defective bodily health, that the inflammation will pursue a protracted and destructive course, because the powers of assimilation and growth are weak, the circulation feeble, and consequently the entire frame destitute of vigour. Deposition of fat, instead of growth of muscle, pallid skin, and feeble circulation, in consequence of ill-assorted or deficient food, and defective respiration, are indications of a state of constitution calculated to modify the local inflammation as much as any positive proofs of the existence of specific scrofulous disease. This state of the system, so often assumed to be scrofulous, is of such frequent occurrence, and is so often the forerunner or cause of the development of real scrofula, that its identification with that disease need not cause surprise, and the practitioner, in adjusting his treatment, may with safety resort to the same measures in the one case that he employs in the other. It is important to determine what are the peculiar symptoms and effects observed in inflammation of the eye caused or modified by scrofula. With this view the practitioner should observe whether or not any one part of the organ is more engaged than another; whether the inflammatory action is intense and acute, or slow and languid; and whether the changes in organization are slight and of ordinary character, or considerable and unusual. In persons either of scrofulous habit or of feeble frame, the parts which suffer most are those situated most anteriorly, such as the cornea, membrane of the aqueous humour, and iris. True circumscribed *corneitis* and inflammation of the lining membrane of the chambers of the aqueous humour, causing adhesions of the margins of the pupil to the capsule of the crystalline lens, are more frequently caused or modified by this state of the system. The retina, it is true, is not unfrequently attacked by slow, destructive, and insidious inflammation under similar circumstances, but general



and severe inflammation, involving the entire organ, is oftener of a simple idiopathic, or of a rheumatic or syphilitic character. Any form of inflammation of the eye may be modified by a scrofulous diathesis, but these insulated affections appear to be more frequently so influenced than others. The sclerotic also appears to give way more frequently from protracted inflammation, and to permit the choroid to project in the form of black, prominent tumours, in persons of scrofulous constitution or debilitated system.

Dr. Jacob continues:—The remarkable increase in red vascularity of the sclerotic, which accompanies all other inflammations of the eyeball, is present in the scrofulous form also. In the more transient and languid attacks, which appear confined in a great degree to the membrane lining the chambers of the aqueous humour, and which disappear after causing adhesions of the margin of the pupil to the capsule of the crystalline lens, this vascularity is very slight, often indeed scarcely to be perceived; but in more severe attacks, and where the iris or the cornea, or both, are engaged, the characteristic sclerotic vascularity is displayed as conspicuously as in any other species. The redness, however, is in general somewhat different from that observed in simple uncomplicated inflammation occurring in a healthy subject. The colour has less of the florid arterial tint, and more of the purple shade derived from venous turgescence; and it is also more uniform and diffused than confined to vessels converging to the circumference, as in syphilitic iritis and other varieties. It sometimes, also, especially where the cornea is particularly engaged, commences in a circumscribed spot at one side, which is followed by a similar one at the opposite, and ultimately by general redness of the entire membrane. This is a remarkable character of the disease.

Insulated inflammation of the cornea, the true *corneitis* of writers on diseases of the eye, appears to take place always in persons exhibiting marks of scrofulous constitution, or of such languor or debility of the frame as is equivalent to such a state.

It is not the gray margin, described as frequently found bounding the circumference in inflammation of the eye in advanced life, and considered to be characteristic of the rheumatic or gouty species, that is to be observed, but a general haziness or milky hue, and a remarkable roughness or loss of polish on the surface of the conjunctival layer, or a slight loss of transparency, having more of a yellowish tint, as if some very slight effusion had taken place in the structure of the part. Very deep-seated, small, white opacities, generally in or near the centre, are sometimes to be seen. The consequences of these attacks often prove that the disease has extended to the cornea, that part of the organ often losing its correct curvature in protracted and unmanageable cases, or becoming prominent or conical in common with the anterior portion of the sclerotic, or separately. It also, in cases of long duration, is pervaded by vessels carrying red blood, and becomes permanently opaque.

In scrofulous inflammation of the eye, or in simple idiopathic or other inflammation modified by a scrofulous diathesis, or by a languid state of the functions of circulation and nutrition, the membrane lining the chamber of the aqueous humour is as much affected as in the most acute attacks in healthy and robust subjects. This is displayed by a muddy or hazy appearance of the cornea, caused by opacity of this membrane, where it covers or lines its posterior surface, as well as by the adhesions which form between the margin of the pupil and the capsule of the crystalline lens. This diffused muddy or hazy appearance which so frequently presents itself in syphilitic, and sometimes in simple idiopathic inflammation, does not perhaps occur so frequently in the scrofulous form; but it sometimes does occur, and is easily recognized. When the cornea is much engaged, an opacity sometimes exists on its posterior surface, in the shape of a small, distinct, white, circumscribed spot; but this may be in the elastic layer of this part, or in its proper structure. The mottled opacity which remains in the shape of delicate specks on the back of the cornea, after the inflammation subsides, and which is particularly noticed in describing the symptoms of idiopathic and syphilitic inflammation, often remains after scrofulous inflammation also. Adhesions of the margin of the pupil to the capsule of the lens take place very generally, and sometimes in consequence of very slight and transient attacks. Strong and extensive adhesions occur in the eyes of females of feeble constitu-

tion at an early period of life, who, when questioned on the subject, declare that they never had any pain or redness of the eye, notwithstanding the defect of vision which accompanies this state of parts. Dr. Jacob does not think there is hypopyon or effusion of purulent matter into the aqueous humour in scrofulous inflammation; the nature of the disease does not, however, render such an occurrence improbable.

The iris in this, as in all other forms of inflammation of the eyeball, is particularly affected, and the changes in colour, as well as the contraction and adhesions of the pupil, are as conspicuous. It is, however, in scrofulous inflammation alone that deposits resembling those which take place in syphilitic iritis, commonly assumed to be coagulable lymph, take place; but in scrofulous inflammation the deposition, when it occurs, is not of the same nature as in the syphilitic disease. It is, in fact, of the nature of true tubercular matter, and instead of being absorbed, as the matter is in syphilitic iritis, it increases in bulk, and either bursts as an abscess externally, or sometimes, but very rarely, into the aqueous humour. *This is the most characteristic and unequivocal proof of the scrofulous nature of the disease,* so much so, that all other changes in structure are but corroborative evidence of its specific nature, taken in connection with constitutional symptoms. The tubercular deposition generally takes place towards the circumference of the iris, near its junction with the ciliary ligament, and consequently under the margin of the cornea. It is at first a small, yellow, irregular mass, with red vessels passing over it, as in the deposits in syphilitic iritis; but it gradually enlarges and extends under the margin of the cornea, beneath the sclerotic, which gives way before it, and allows a prominent yellow mass to project beneath the conjunctiva. This continues to enlarge, and assumes the appearance of an abscess, and in some cases becomes so prominent and irregular in form, is so enveloped in large and tortuous vessels, and presents so peculiar an appearance, from the dark choroid coat appearing through the thinned sclerotic around it, that it has sometimes been supposed to be of malignant character.

In the case of an unmarried lady, of about 20 years of age, the whole eyeball became filled with a firm yellowish mass, presenting all the appearance of scrofulous tubercle, and suppurating at several points, so that Dr. Jacob could pass a probe, in different directions, nearly from one side to the other. The contents gradually crumbled down, and escaped with purulent discharge, leaving ultimately a shrunk and retracted sclerotic in the bottom of the orbit, and so little of any other morbid condition that she was able to wear an artificial eye without any uneasiness. In a scrofulous girl of 8 or 10 years of age, a yellow tubercle, the size of a small pea, formed in the iris during inflammation, and burst near the margin of the pupil, allowing the contents to project into the aqueous humour, in which, however, it was not diffused, but remained in a solid state until it was ultimately absorbed.\*

13. *The Treatment of Inflammation of the Eyeball in a truly Scrofulous Subject.*—In treating inflammation modified by a scrofulous diathesis, or even by that languid or defective condition of the nutritive functions which is often assumed to be scrofulous, Dr. Jacob suggests a great degree of caution. A patient, otherwise in vigorous health, may be, and often is, benefitted by local or even sometimes by general bleeding; but such a subject may also suffer from it, if it has not the effect of arresting the inflammatory action. The sudden abstraction of blood, by diminishing the activity of the capillary circulation, will often cause local inflammation to abate, or even to cease altogether; but if it has not this effect, it often contributes to produce that state of the system which leads to the deposition of serum, pus, or lymph, or even of tubercle, and more frequently in scrofulous than healthy subjects. In such subjects also bleeding appears to have less effect in causing the inflammation to abate or cease; this is especially to be observed when bleeding is resorted to after the inflammation has existed for some time. If resorted to at all in this form of inflammation, it should be at the earliest period, and with the view of suddenly weakening the heart's action, and thereby diminishing the activity of the capillaries, rather than for the purpose of suspending nutrition, or interrupting the salutary and ordinary functions of the circulating organs. The

\* The Dublin Med. Press.

local abstraction of blood by leeches or cupping may be adopted with less risk of bad consequences; but in neither form is this resource to be relied on.

The practice so generally pursued of suspending the processes of growth and nutrition by denial of the usual quantity of food of proper quality to arrest inflammatory action, also requires reconsideration when it comes to be applied in scrofulous subjects more particularly. It should be recollected that persons cannot continue to live without a renewal of their blood circulating in their vessels, and it is obvious that such renewal can be effected only by the administration of food capable of affording such blood. A sufficient supply of ingredients necessary to sustain life is also required to maintain a healthy state of the system, and without such healthy state inflammatory action cannot be controlled or prevented from proceeding to the extent of effecting destructive changes of organization. The practitioner should not, in scrofulous subjects, interdict for any length of time the use of nutritious food in sufficient quantity to supply the incessant expenditure of its elements by secretion and excretion. The sudden and total discontinuance of animal and vegetable materials necessary to sustain life or pre-serve health, and the substitution of those incapable of doing so, such as are commonly called slops, should not be permitted. The peculiar character of inflammation in scrofulous subjects is its not yielding in a short time, or in a distinct way, either spontaneously or to remedies, but rather gradually diminishing in intensity, or becoming chronic. We should, therefore, provide for its consequences by sustaining the strength and health of the patient. Animal food should not be interdicted; it should not be given, especially at the commencement, in such quantity as to risk even a temporary increase in the quantity of the circulating fluids, and thereby to induce increased action of the heart and corresponding activity of the capillary currents. The patient should have as much nutritious food as will secure the supply of the necessary quantity of blood of good quality to his system. Sudden and extensive change of diet should be avoided for another reason. The stomach and alimentary canal may have their ordinary functions disturbed or interrupted by the discontinuance of the usual digestible food, and the substitution of new and less agreeable aliments, and experience has fully proved that nothing contributes more to the destructive progress of inflammatory action than such disturbances. These observations are applicable to the treatment of all forms of inflammation of the eyeball, although Dr. Jacob has reserved them for the present occasion, because it is in the scrofulous form of disease the necessity of attention to the digestive, absorbent, and nutritive functions becomes more urgent.

Respiration of pure air frequently changed, the maintenance of the necessary amount of animal heat, and exposure to sufficient light, should not be neglected. It is not only in the close, crowded, and uncleanly dwellings of the poor that attention to respiration of pure air is demanded, the sleeping-rooms and nurseries of affluent persons frequently require as much care, badly constructed as they generally are for the attainment of this object, and incumbered, as we frequently find them, with window and bed-curtains, carpets, and unnecessary furniture. The maintenance of a salutary amount of heat in the system, especially in young persons, requires attention also, difficult as it often is to secure it, in consequence of the direction of the current of air flowing from the doors and windows to the fireplace. A temporary screen, with the necessary clothing and bed covering, and in winter a fire of sufficient strength, will enable the attendants to effect this object. The exclusion of light, or immuring the patient in total darkness is generally considered an essential part of the treatment in all inflammations of the eye, yet the practice is founded on erroneous views. That light must necessarily cause pain, and consequently irritation, if admitted into an inflamed eye, is a mistake. It often does produce this effect, especially in the advanced stage of disease, and in peculiar forms of it, but as often do we find no inconvenience experienced by its presence. Therefore light is not to be excluded, but merely as a precaution the sun-blinds are to be let down, or the patient is to sit with the back to the window or candles, as long as no complaint is made of pain from exposure; in the majority of cases distressing intolerance of light is induced by rendering the eye more sensitive to it by the use of shades and curtains. These observations respecting diet and general management are more applicable to what is called the after-treatment than to the first attempts to arrest inflammation. The rule from the



very commencement should be to avoid as much as possible making the patient an invalid, and in all cases where the practitioner can venture to do so, he should treat the patient without confinement to bed or bedroom, and even, if the weather be fine, allow exercise out of doors in shaded situations.

Antimonials, mercury, iodine, turpentine, iron, cinchona, sarsaparilla, guaiacum, and even colchicum, may be made as available, with the necessary limitations which circumstances demand, in scrofulous as in the idiopathic, syphilitic, or rheumatic species. It is necessary, however, to suggest some modifications of these agents, to adapt them to the treatment of this form of disease. In a well-marked acute attack of *iritis*, or inflammation of the eyeball, occurring in a scrofulous subject, mercury must be given as under similar circumstances in other varieties, but the practitioner should not forget that he has to deal with a constitution which will not ultimately bear with impunity the effects of this remedy as well as the ordinary or healthy one; and also that the beneficial effects of a full and free course of mercury are not so decisive as in a sounder state of the system. The medicine should be more cautiously introduced, unaccompanied by that debilitating treatment so often adopted in other cases, and it may even be given in combination with tonics, and during the use of nutritious food. The preparation requires consideration. The blue pill, with or without opium, as the state of the bowels demands, will generally prove sufficient, and in less acute cases the compound calomel pill may be found preferable. Corrosive sublimate has been much extolled in the more chronic forms of inflammation, both of the eye and conjunctiva, but as the advocates of it generally direct it to be dissolved in tincture of cinchona, by which it is of course decomposed, no evidence of its superiority is afforded. Iodine, in scrofulous inflammation, should be more relied on, if confidence is to be reposed in the opinion entertained respecting its virtues in this disease generally. A practitioner would not be justified in relying on iodine in any form as a means of arresting in its first stage acute inflammation of the eyeball, caused or modified by scrofula, but he may place reliance in it as an aid in the more advanced stages, either in combination with or following mercury. The plan is to give mercury in moderation, until it begins to produce its usual effects, and then to commence with the iodine of potassium. Five grains of the *pilula hydrargyri* three times a day, until the gums become affected, and then continued in five-grain doses, at night only, giving from five to ten grains of the iodide of potassium in the morning and middle of the day. After this has been persevered in until the mercury has had a fair trial, the pill at night is discontinued and the iodide substituted for it, either alone or in decoction of bark, if the stage of the disease and the state of the constitution demand it; or the iodide of iron in syrup, in the dose of three or four grains daily, is given. In those cases in which the inflammation is a repetition of former attacks, or a relapse, or where it has become refractory and chronic, mercury having been freely and repeatedly used before, the iodide of potassium or iodide of iron affords an obvious resource, and under such circumstances effects as much as could be expected from any other remedy.

In the more advanced stages, or even at an earlier period, if the disease does not yield to the remedies above enumerated, tonics and nutritious food, removal to a more healthy locality, and every other means usually resorted to in scrofulous affections must be adopted. Cinchona or other vegetable tonics, in such forms as the practitioner may consider best suited to each individual case, may be employed with advantage; and iron, either alone or in combination with other remedies, should have a trial. Patients residing in large towns should be removed to the country, and even from one locality to another differently situated. As to local treatment, little remains to be added, except, Dr. Jacob\* says, enjoining more caution as to the application of blisters, which, in scrofulous subjects, so often are the cause of enlargement of the cervical glands.

14. *Granular Conjunctivitis*.—This is neither more nor less than a catarrh of the conjunctiva, resembling in every respect affections of the same nature in other mucous membranes; it may terminate by resolution, but most frequently passes into a chronic state; it may be accompanied by serous and phlegmonous chemosis,

\* Dublin Med. Press, Aug. 1847.

vascularity around the cornea, yellowish-white semilunar interlamellar effusions in the circumference of the cornea, extending more or less towards the pupil, ulcerations of the cornea, inflammation of the iris (very rarely); and in its chronic state—granulations, pannus, glandular blepharitis, pustules on the conjunctiva, spots on the cornea, staphyloma, &c.

It is frequently epidemic, and is then always contagious; in illustration of this Desmarres refers to epidemics, and to cases which have occurred under his own notice in Paris, and quotes Mr. Mackenzie's work, but there is no means, in the present state of science, of accounting for the disease being sometimes simple and non-contagious, and at other times epidemic and contagious.

15. *Treatment of Granulations of the Conjunctiva.*—The treatment of this obstinate affection, which is a frequent sequel both to catarrhal and purulent ophthalmia, Desmarres states, must vary according to the character of the granulations; resolvent ointments, red or white precipitate ointment, excision (when large), scarifications, excision followed by cauterization, and cauterization with nitrate of silver or sulphate of copper, are the remedies enumerated.

In all cases cauterization should be superficial: Desmarres has made for his own use a series of *caustic pencils of graduated strength*, applicable to the different degrees of acuteness or chronicity of these granulations. He remarked that the sulphate of copper is very useful so long as they are still vascular, but it is powerless when they become pale and nearly cartilaginous; that pure nitrate of silver is not attended with this inconvenience, but the reaction which follows its application is frequently too violent, and attended with serious accidents, several of which, both general and local, are enumerated. To avoid these two inconveniences, the inefficacy of the sulphate of copper and the too great energy of the nitrate of silver, Desmarres had these pencils prepared by mixing nitrate of potassa with the nitrate of silver, in the proportions of a half, a quarter, and an eighth of the caustic ingredient; these pencils are hard, firm, smooth, and little alterable by exposure to the air. This writer dwells most especially on the proper methodical application of caustics to the eye, having especial regard, when applied to suppress granulations, to the state of inflammation of the neighbouring structures, and to the redness, volume, and density of the granulations; when they are full, hard, and nearly cartilaginous, excision is impossible, and the sulphate of copper nearly useless; to destroy their vitality is the indication, and careful cauterization with the pure nitrate will effect the object, and produce no ill consequence, if any excess of caustic be washed away with a little dilute hydrochloric acid. A day or two afterwards, if the granulations are not sufficiently irritated (red), the cauterization may be repeated. On the fall of the eschar thus produced they will be found vascular, bleeding, and smaller, when the sulphate of copper may be used about every second day. By degrees the redness disappears, and they resume the pale yellowish colour they had at first. At this time the diluted nitrate will be found of the greatest service, measuring and appropriating the strength of the pencil to the degree of paleness of the granulations—experience will soon teach which pencil in the series should be preferred. In this manner, without any risk to the structures, a degree of vascular activity can be kept up sufficient to make the granulations disappear. Desmarres has employed this method for three years in numerous cases, and has never had to regret an accident.

We have no space to enter into the various practical details on the other varieties of inflammation of this membrane. The *Miasmatic conjunctivitis* is described as being produced by gases emanating from animal and vegetable matter in a state of putrefaction, of which instances present themselves in nightmen, scavengers, &c. In accordance with the author's general views, the varieties of *Exanthematic conjunctivitis* have nothing special, except the causes by which they are produced; and the treatment of every species of granular conjunctivitis is founded upon one general basis, with but very few modifications for the different species and varieties of the disease. All the varieties of *Purulent conjunctivitis* are contagious in the highest degree, and the history of one of these varieties is that of the others, apart from some difference in the rapidity of succession of the phenomena. Desmarres considers the purulent ophthalmia as a disease totally distinct from the granular, or catarrhal, and not, as believed by many, the same affection, differing only in degree.

§ VI.—*Diseases of the Cornea.*

This chapter in the work before us comprises articles on—1 and 2. *Corneitis* and its sequelæ; 3. *Perforations*; 4. *Incisions* of the cornea; 5. *Foreign Bodies* in the Cornea; 6. *Pricks*; 7. *Contusions* and *Ruptures*; 8. *Burns*; 9. *Fistulæ*; 10. *Softening*; 11. *Gangrene*; 12. *Spots*; 13. *Ossification*; 14. *Opaque Staphyloma*; 15. *Conical Transparent Staphyloma* of the Cornea; 16. *Keratocoele*; 17. *Vegetations*. Of 1634 patients treated by Desmarres, 636 had affections of the cornea.

16. *Congenital Opacity of the Cornea*.—The following case, described by Dr. Tavignot, has been published in several of the journals.

In a child aged ten months\* the eyes were in the following condition. The eyeballs were of a natural size, their form being, however, more regularly spherical than usual, and both being agitated by that sort of lateral movement called nystagmus. In all its extent, with the exception of a transparent zone, one line in breadth, at its circumference, the left cornea was completely opaque; on the right side the opacity was limited to the very centre of the membrane, one-third of which only was impervious to light. No traces of morbid vascularity could be detected, the lids being natural, and showing no marks whatever of previous ophthalmia. The iris, in each eye, had almost completely disappeared, being reduced to a small grayish line, in contact with the ciliary ligament. The pupil appeared to be perfectly insensible to the influence of light; vision existed on both sides, but too strong a light caused photophobia, and produced sneezing. The infant was born in this condition, and had never since birth suffered from ophthalmia. Examining the case in an etiological point of view, Dr. Tavignot remarked that the alterations might be referred either to an arrest of development, in consequence of which the cornea preserved in a permanent manner the temporary opacity existing provisionally during the first months of intra-uterine life, or more probably, to inflammation attacking the cornea during gestation. (Vide Half-yearly Abstract, Vol. II. p. 92.)

17. *Corneitis*.—Inflammations of the cornea are either superficial, interstitial, or deep; partial, or general; they are either primary or secondary.

*Primary or Idiopathic corneitis* is either diffuse or punctiform; the first is generally of very long duration, although exceptionally rapid; it is a serious disease, resolved with difficulty, and most frequently terminates in specks, the matter effused becoming organized between the laminae; it frequently leads to amaurosis, and induces adhesions between the iris and capsule, and occasionally staphyloma. In severe cases Desmarres prescribes local bleeding and calomel, and subsequently (quoting Mackenzie's practice) sulphate of quinine: and in the later stages blisters, about the size of a franc, applied successively around the orbit, and a very weak solution of borax applied tepid as a collyrium.

Desmarres' description of *Punctiform corneitis* is so novel that we have given it in a condensed form as a separate article in our extracts. (Art. 56, p. 84.)

*Secondary corneitis* is always a consequence of external, and rarely complicated with internal ophthalmia, a character which distinguishes it from primary corneitis. There are two distinct forms, which in some cases occur together. Desmarres gives the following table of these forms and their varieties:

Secondary corneitis.	1. Vascular	Superficial	Partial and General	Acute and Chronic
		Deep-seated	Partial and General	Acute and Chronic
	2. Non-vascular or Suppurative and Ulcerative	Superficial	Partial and General	Acute and Chronic
		Interstitial		
		Deep-seated		

Vascular corneitis is where vessels appear on the cornea: suppurative corneitis, otherwise abscess of the cornea, is where one or more effusions of lymph or pus form between its laminae; but it can be easily understood that vascularity of the

\* Med. Times, July 24; from a Report of the Acad. of Sciences.



cornea may terminate in effusion between the laminae, and that an abscess forming in the course of an external ophthalmia may exhibit vessels proceeding from the circumference. Desmarres describes all the above varieties very minutely, with the circumstances under which they occur. Superficial vascular corneitis is frequently the consequence of pustular conjunctivitis, and, when general, may terminate in inter-lamellar effusion, or in a pustule. It has been called panniform by some authors. It occasionally terminates in a kind of pannis, and very frequently in ulcerations of the cornea, with all their consequences. Mr. Jones makes the scrofulous ophthalmia essentially a species of corneitis.\*

Desmarres states that when corneitis first declares itself we can arrest the inflammation at once by the employment of a collyrium of nitrate of silver; but, to succeed, the collyrium must contain, at least, a twentieth part of the salt, the instillations must be repeated every half hour during, at least, one day, and when the remedy has been commenced its application must not be interrupted until the intolerance of light has disappeared. Desmarres recites the difficulties which attend this practice. The pain is compared by the patient to the introduction of fire, and sometimes becomes insupportable; and a pause should be made before the cure is attempted in this way in nervous individuals. After a very short time the solution requires to be applied only four or five times a day; and the author has remarked that from its use the conjunctiva has sometimes presented a peculiar kind of relaxation very difficult to remove by the use of excitants.

Deep-seated vascular corneitis is always a consequence of chronic ophthalmia, and attacks individuals of a certain age only. It is the result of a kind of disorganization of most of the membranes of the eye, and complicates the most serious affections of the globe, complete blindness being its invariable consequence.

18. *Use of Belladonna in Perforating Ulcerations of the Circumference of the Cornea.*—In the course of catarrhal and purulent inflammations interlamellar effusions take place in the cornea, sometimes very large, slanting outwards, sometimes progressing inwards, and gradually destroying the deep laminae of the cornea. The question arises, should the pupil be dilated? If the ulcer is so large that a prolapse of the whole margin of the iris is to be feared, Desmarres says, yes:† if the ulcer is limited and threatens only a very small part of the subjacent iris, no. By dilating the pupil in the first case, it is evident that the whole of that part of the pupil situated opposite to the ulceration will be saved; while in the second case, on the contrary, the projecting part of the iris seems to close the opening without risk to vision.

In perforating ulceration of the centre of the cornea, with recent hernia of the iris:—Having shown that when the case is seen in time this occurrence which threatens to compromise or destroy vision ought to be prevented, Desmarres asks the question, ought we to despair of reducing it? and answers by stating that his experience, on the contrary, has demonstrated that in most cases, not only may a reduction of a part of the iris be produced, but also the complete re-establishment of the pupil, without any ulterior damage to vision. For which purpose recourse must be had, before gangrene of the iris from compression occurs, to the following treatment:

Keep the patient on his back, with his head low, and as quiet as possible; apply light compresses to the eye steeped in the following liquid, changing them every five minutes, and at each application instil a drop of the same liquid between the eyelids, with the greatest precaution not to press upon the globe of the eye: R.—Distilled water, two pints; the herbs belladonna and hyoscyamus, of each two ounces; infuse and add six drachms of extract of belladonna freed from fecula; filter and keep cold with ice. The cold application diminishes the flow of blood in the capillaries of the whole organ, and prevents the gangrene of the projected portion of iris by preventing the inflammatory distension; while the belladonna diminishes the hyperemia of the iris, and tends to disengage it from the position into which the flow of the aqueous humour through the ulcerating cornea has brought it.

Desmarres was led to the application of this powerful iced preparation of belladonna in this and other ophthalmic cases, by considering the fact that these ulcer-

\* Lib. cit., p. 174.

† Lib. cit., p. 305.

ations are accompanied with a violent hyperemia, the iris being strongly injected, and the pupil almost immovable; that the ordinary mode of applying belladonna, particularly in inexperienced hands, has frequently no effect; that when the eye is healthy the iris is very easily narcotized by repeating the application, even at distant intervals; but that when the membranes, and particularly the cornea, are inflamed, this is effected with much greater difficulty. Desmarres repudiates every attempt, either in old or recent cases of proclivencia, to reduce the hernia with stiletts and analogous instruments: in his experience these have always increased the inflammation, and have never done any good.

When a hernia, although small, has actually taken place at the circumference, if the iris is found gradually protruding, so as to threaten the pupil, the latter should be dilated, and methodical compression resorted to.\*

19. *The Curability of Opacities of the Cornea.*—A discussion appears to have arisen on this subject. Dr. Jacob has stated that however dense opacities may be, they will be obliterated in time "unless they are cicatrices."† This is admitted also in Mr. Wharton Jones's book: but Dr. Howard, of Montreal, has published several cases to prove the curability of opacities—including cicatrices, under the designation of "opacities of the cornea."‡ Dr. Jacob does not deny that many cicatrices even may be diminished in extent, without any application whatever. The treatment employed by Dr. Howard consists in fumigations every day, for ten minutes, with hydrocyanic acid, and after the lapse of another ten minutes dropping into the eye a solution of nitrate of silver, ten grains to the ounce, or Janin's ointment (Bol. armen., tutiæ ppt. āā ʒij; hydr. præcip. alb. ʒj; axunge ʒj), and the application every ten days of solid nitrate of silver. It appears to be generally admitted, as stated by Mr. Jones, that where the opacity depends upon interstitial deposition, it tends, ultimately, to disappear, and needs no special remedy, although general tonics and local stimulants may frequently hasten this end: but where opacity is the consequence of a slough or ulceration, it will most assuredly remain opaque, although there may be a great deal of opacity surrounding a cicatrix, which may be made to disappear by remedies of the kind mentioned.

Desmarres has obtained no benefit from the use of hydrocyanic acid, either in superficial opacities of the cornea, or in photophobia.§ He believes that all the pretended specifics for the cure of opacities act in the same manner, by continually exciting the vitality of the eye, and that an equally good effect may be obtained by stimulating the eye daily with a feather passed over the conjunctiva. In the treatment of albugo and leucoma, Desmarres mentions *scarifications*, having seen many instances of opacity in which punctures and incisions in the centre of the opacity have induced a well-marked transparency at its circumference. They are applicable to central leucomatous spots surrounded with recent inter-lamellar effusions; and their efficacy may be most depended upon if bleeding should follow each puncture—a circumstance which indicates that the spot is not an inert product, and is accordingly susceptible of absorption. The *seton*, according to Desmarres, is abandoned, on account of its difficulty, the pain it induces, and its liability to occasion purulent deposits. *The excision of a portion of the cornea and its reunion by suture* is a measure adopted by Dieffenbach, but, according to Desmarres, not entitled to imitation, and *abrasion* is a remedy which ought to be tried only after every other has failed, on eyes which are completely blinded, and wherein an artificial pupil cannot be made; this operation is extremely perilous, although it would appear to have succeeded in some hands.

20. *Keratoplasty*.—In our second volume we gave an account of the operation of *transplantation of the cornea*.§ Desmarres states that its success is by no means certain. Unfortunately, after transplantation, the new cornea has in every instance remained more or less opaque, and it may even become reabsorbed.|| It can be applicable only in the most desperate cases. Under this head Desmarres refers to a curious fact, frequently observed after amputation of an opaque staphyloma of the cornea, viz., an elongation of the scanty shred towards the circumference of the cornea, or, perhaps, even a partial reproduction of this membrane.¶

\* Lib. cit., p. 307.

† Lib. cit., p. 331.

‡ Desmarres, p. 333.

§ Dublin Med. Press, April 22, 1847.

¶ Half-yearly Abstract, Vol. II. p. 235.

¶ Gazette des Hôpitaux, 19 Oct., 1843.

Finally, and in reference to the above recitations from Dr. Jacob and Dr. Howard, we may state that Desmarres concludes his article on this subject by remarking, that in the most extreme cases, resulting from abscesses and ulcers, the surgeon should not be in a hurry to recur to the desperate remedies poken of, particularly to abrasion and keratoplasty. It should not be forgotten that the resorption of spots on the cornea takes place very slowly, requiring not only days, nor even months, but, as Fabini has said with justice, *“Notandum tamen, in optatisimo quoque casu, pellucidatum corneæ lente et fere insensibiliter tantum restitui, ita ut quandoque non per menses, sed per annos, curatio duret.”*

M. Perez de la Flor mentions *acupuncture* as having produced excellent effects in opacities of the cornea.

The patient being placed as for the operation of cataract, and the eye being fixed, an acupuncture needle is held in the same manner as a writing pen, and introduced at a very acute angle, of two or four degrees, at each of the extremities of the vertical and transverse diameters of the cornea, half a line from the junction of this membrane with the sclerotica. It is made to penetrate sometimes to the second of its constituent lamina, sometimes to the membrane of the aqueous humour. The needle is always allowed to remain for a period varying from two to five minutes. After having withdrawn it, inflammatory reaction has to be treated according to its degree. The end of the needle is sometimes moistened with prussic acid, twelve drops to a drachm of distilled water.\*

21. *Operation for the radical Cure of Opaque Staphyloma of the Cornea.*—Desmarres' operation is this:—The patient's eye is fixed in the same way as for Scarpa's operation. An ordinary cataract-needle with a fine blade, a strong pair of forceps, the branches of which meet by pressure a considerable length, and a pair of straight scissors, are the only instruments necessary. A small puncture is made with the needle at the most dependent part of the staphyloma, through which the aqueous humour soon exudes, and the tumour collapses in every direction; it is immediately seized with the forceps, held vertically with the left hand, the point of the forceps upwards, and separated with one cut of the scissors, the point directed downwards. Care is necessary, not to drag upon the globe of the eye, so as to excite muscular contraction. This proceeding, applicable to complete spherical or conical staphyloma, is less painful than those usually resorted to, and consequently the accidents which the pain is apt to induce, as, for instance, convulsions, are less likely to take place.

22. *Fungous Growth produced by a Wound of the Cornea.*—A case is described by Dr. G. Scotti, of Pavia; the cornea was softened by the blow, and grew into a fungous excrescence, flattened by the habitual pressure of the eyelid upon it; the affection was cured in four or five days, by touching the growth with solid nitrate of silver, and applying belladonna stupes to the eye.†

#### § VII.—Diseases of the Sclerotica.

After describing the black spots occasionally observed in this membrane, and its state of attenuation produced by various circumstances, Professor Desmarres describes the varieties of—

23. *Staphyloma of the Sclerotica.*—This affection may involve both the sclerotica and the choroid membrane, and may be produced by any disease of the eye which tends to weaken the tissue of the sclerotic coat. Its treatment varies according to the exciting cause. If the tumour be small, and consecutive to a partial atrophy of the membrane, the cause of the disease no longer existing, a complete cure may be expected by touching the staphyloma regularly once or twice a week with a pencil of nitrate of silver. If the cauterization prove ineffectual, the small tumour may be punctured every eight or ten days, applying to the eye, immediately after each operation, slight methodical compression. If the tumour be of a large size, and confine the motions of the eyelids, paracentesis of the eye may be performed, and the operation repeated; when these measures fail, the tumour must be completely removed by the operation recommended for the opaque staphyloma of the cornea.

\* Gaz. Méd., May 25, p. 423, from El Regenerador.

† Wilde's Report; the Dublin Journal, Feb. 1847.



24. *Scleritis (Rheumatic Ophthalmia of Authors).*—A short abstract of Desmarres' account of this disease will still further serve to explain to our readers his doctrines in reference to the connection which subsists between affections of the eye and certain constitutional diseases. Desmarres remarks that there is no case of acute conjunctivitis, corneitis, iritis, choroiditis, or retinitis, without a complication of scleritis, which circumstance may be understood by bearing in mind the vascular connection which exists between all the membranes of the eye, and particularly between the cornea, sclerotica and iris. It is, however, certain, that the sclerotic injection is almost always secondary to a more violent inflammatory state of some of the membranes. A true and simple inflammation of the sclerotic coat is a rare occurrence, still it certainly may exist, and Desmarres has witnessed cases. Thus, we have partial or general, acute or chronic, but very rarely primary, scleritis, and the affection is generally secondary to inflammation of some of the most important structures of the eye. *Anatomical symptoms.*—In acute scleritis, the redness assumes a particular form, that of a circle, of variable breadth, surrounding the cornea; when the circle is complete, the scleritis is general; when incomplete, partial. Beyond this circle it is scarcely rose-coloured; most frequently, absolutely white. The vessels composing the vascularity are very fine, parallel, larger at their corneal than at their other extremity, and about four or five millimetres long; the tint varies from the palest rose to the brightest carmine. The large ends of the vessels almost rest on the cornea, and terminate abruptly; the opposite extremities seem to lose themselves in the sclerotica; these vessels are deep-seated, and do not anastomose, and have been compared to the disc of a radiated flower. They cannot be confounded with the vessels of the conjunctiva, which are sinuous in their course, very long, anastomose together, having their bases turned to the folds of the conjunctiva, and their summits crossing the direction of the vessels of the sclerotica, and seated superficially. The latter are also moved with the membrane, as when traction is exercised on the inferior eyelid; whereas the sclerotic vessels always remain immobile. For the most part, as already stated, this condition of the sclerotic occurs as an epiphenomenon in other affections of the eyes. *Physiological symptoms.*—The most marked is intolerance of light, attributable, according to Desmarres to a concomitant irritation of the retina. Pain is generally very violent, and corresponds with the degree of injection. The motions of the eye become difficult, and the organ appears to the patient to be increased in size. Pains frequently radiate from the bottom to the front of the orbit, towards the orbit and the whole side of the face; they are frequently increased as evening advances, and in the night. Vision is generally modified; it is best in a dull light, but, on account of the insurmountable difficulty in opening the eye, it frequently cannot be exercised at all. This difficulty occurs especially in infants and young scrofulous persons. The spasm and lachrymation which occur, have been referred to the extension of the inflammation to the ciliary body. In the chronic affection, the same symptoms exist in a minor degree. *Termination.*—Scleritis generally terminates in resolution, sometimes it becomes chronic, and it occasionally leads to amblyopia or staphyloma. *Etiology.*—In scrofulous subjects, when the sclerotica becomes inflamed consecutively to other inflammations of the eye, it generally remains so much longer than in other persons, and relapses are very frequent. In rheumatic subjects, this same membrane appears also to become the seat sometimes of a very obstinate inflammation. This is the circumstance, according to Desmarres, which has led certain practitioners to admit a rheumatic ophthalmia, easily distinguished, according to them, from idiopathic inflammation, but which, in reality, does not present *one distinctive anatomical character.*

In the article "*Corneitis*," Desmarres shows that the phlyctenæ which occur in the cornea, in what has been termed rheumatic corneitis, has no value whatever as a distinctive character, and he here states that it is the same with the arrangement of the vessels in scleritis—that is to say, as far as the rheumatism is concerned, there is nothing specific in it. The conjunctiva inflames under the influence of cold; the sclerotica is subject to the same laws. Dr. Desmarres cannot comprehend why, in the latter case, we should refer to a particular principle which does not exist in the former, and he quotes Mr. Mackenzie, who has described the disease under the term "*rheumatic ophthalmia*," as having been aware of the

"vicious" character of this denomination. Mr. Mackenzie says—"If I am asked what I mean by rheumatic ophthalmia, I answer: 1. I intend simply to express an inflammation of the fibrous membrane of the eye, the sclerotica, and of similar structures, recognizing the influence of cold as a cause. 2. I do not believe that this ophthalmia is an inflammation differing in *nature* from common inflammation, having its source in what is called the rheumatic constitution or diathesis. 3. The rheumatic ophthalmia occurs frequently in individuals who have never had rheumatism in any other parts of the body. 4. I have adopted the expression *rheumatic ophthalmia*, but perhaps it would have been more exact to say *idiopathic scleritis*." By this passage, Desmarres remarks, we may see that the rheumatic ophthalmia of authors is neither more nor less than ordinary inflammation of the sclerotica, and yet a new-born infant cannot have an injected sclerotica but it is referred by accomplished practitioners to rheumatism; and in treating of iritis, and of the serous membranes of the eye, Desmarres urges that the same preconceived ideas have opened a false route to those who have adopted them.

A friend of our own was operated upon for cataract by depression; he had an attack of well-marked scleritis in an aggravated degree; in accordance with generally received doctrines, this was called a "rheumatic ophthalmia," and yet this individual was upwards of fifty years old, and had never known what it was to feel a rheumatic pain.

The *treatment* of acute scleritis, Desmarres states, is essentially antiphlogistic, and, without offering anything new, he admits the propriety of the ordinary remedies, except that he remarks, respecting the use of collyria, that they are far from being attended with the bad results which some authors attribute to them in this disease. When the inflammation is associated with an incipient internal ophthalmia, as iritis, capsulitis, or choroiditis, all collyria are doubtless contraindicated, that of belladonna excepted; but when the inflammation is external, they frequently moderate all the symptoms in a very short time. The nitrate of silver especially, strong and frequently instilled into the eye, is of the greatest use; and when the inflammation begins to subside, weak solutions of rhatany and tannin may be employed, particularly if, in winter, they are used slightly warmed. The nitrate of potassa may be employed in the same manner.

As well calculated to show the unsettled state of ophthalmic pathology, we may here state to our readers that Dr. Jacob, admitting to the full extent a rheumatic ophthalmia, condemns ophthalmic writers, for the assumption that it has its seat more especially in the sclerotic coat, and states his conviction that this coat is no more the seat of the disease than the other portions of the eye, and that this notion has had the injurious effect of diverting the practitioner's attention from the more important consideration that the whole of the organ is engaged, and the parts essential to vision are in danger.\* He also admits that the diagnostic signs of the disease may be entirely absent in some cases, and may exist in others totally independent of the rheumatic diathesis.

Turning to Mr. Jones's Manual we find eight paragraphs devoted to the description of rheumatic ophthalmia: then in a foot-note we have the synonymes "*rheumatic scleritis*" and "*idiopathic scleritis*;" then it is stated that the subjects of the disease are always adults, and admitted that they may never have suffered from rheumatism in any other part of the body; and, finally, a description of the complication "*catarrho-rheumatic ophthalmia*."†

Dr. Jacob's views are far more consistent with those of Desmarres, and, as we think, with the common-sense view of the case: he denies that the disease is properly called rheumatic in individuals who have never suffered from rheumatism; it may, perhaps, occasionally occur, but not frequently, without inflammation of the joints or other organs, but not without constitutional rheumatic disease: if that be not present the local inflammation is destitute of the specific character.‡

#### § VIII.—Diseases of the Anterior Chamber.

The affections of this part of the eye, according to Desmarres, are *hypopyon*, *hypohemia*, or effusion of blood, and *decemetitis*, or inflammation of the membrane of the aqueous humour.

\* Dublin Med. Press, 1846, p. 193

† Lib. cit., p. 121.

‡ Lib. cit., p. 196.

25. *Hypopyon*.—Paracentesis of the cornea for this affection, as recommended in severe cases by Tyrrel, Mackenzie, and Jones\* is condemned by Desmarres, who regards the operation as at once useless and dangerous.†

26. *Dacryotus*.—Jones, and most other writers, state that flakes of lymph occur in the aqueous humour when its membrane is inflamed; Desmarres has never been able to find such flakes, even when the aqueous humour has appeared to be turbid: on resorting to paracentesis for the relief of the patient, it has always proved to be transparent. Desmarres denies the fact, but not the appearance presented: for, like other observers, he has seen lymph, and even pus, deposited, but always in the most dependent part, the other parts of the chamber remaining perfectly transparent. The treatment recommended by Desmarres is the same as in primary corneitis, or iritis in the first degree, and he states that paracentesis of the eye, which was advocated by Wardrop, is here very useful in acute cases. It may be resorted to even when the cornea is greatly affected; patients have always been relieved immediately by the puncture of this membrane, and the inflammation has never been aggravated, as represented by Middlemore.

27. *Deficiency of the Aqueous Humour*.—M. P. Bouisson, professor of clinical surgery at Montpellier, has published a memoir on the deficiency of the aqueous humour which occurs after the operation for cataract, and in some other cases;‡ and since we find no mention of this as a pathological condition of the anterior chamber, either by Desmarres or Jones, we give a full abstract of the paper. According to M. Bouisson, it is one of the accidental results of the operation for cataract, and has been very little attended to. When the aqueous humour is abundant it separates the iris from the cornea, augmenting the tension and the convexity of the latter, and reducing its thickness; it contributes also to the enlargement of the posterior chamber, by slightly depressing the lens, but the latter action is much less marked than the former, in consequence of the resistance which the vitreous body opposes to the retropulsion of the lens. When the aqueous humour is in small quantity, the iris approaches the anterior crystalloid and the concave surface of the cornea, which circumstance influences the refraction of the rays of light, and allows plastic inflammations to organize permanent relations between the iris and the cornea, or the anterior crystalloid.

Every direct wound of the cornea is liable to result in the evacuation of the aqueous humour, but it is reproduced in a very short time; even if the wound does not cicatrize, and the liquid continually flows out, its reproduction is not the less rapid, as seen in fistula of the cornea. The operation for cataract is one of those causes which most frequently leads to the loss of the secretory function of the aqueous humour. Many authors appear to have noticed this fact, but not to have specially attended to it. A case by M. Mannoir is quoted by M. Bouisson, in which, after an operation, the aqueous humour flowed through an opening in the cornea, and enfeebled vision; the reproduction of the liquid was not sufficiently rapid to act on the cornea and re-establish its natural convexity; and from the manner in which M. Mannoir expresses himself, it is manifest that he has made the same observation under divers circumstances. Much more simple lesions of the cornea are sometimes followed by the same effect. M. Bouisson has seen it after an accidental wound, whether a fistula was formed in this way, diminishing the secretion of the aqueous humour, or whether the iris adhered on a level with the wound of the cornea, the aqueous humour being insufficient to force this membranous diaphragm, and overcome the feeble resistance of the soft adhesions formed during cicatrization. The want of reproduction of this liquid, far from being always the consequence of the adhesion of the iris, may precede this, which requires a certain time to form. The same circumstance may occur in the operations for artificial pupil, and in wounds made for the extraction of foreign bodies, and punctures for the evacuation of sanguineous and purulent effusions.

The morbid disposition which tends to diminish or to prevent the reproduction of the aqueous humour, is set up under divers influences which manifestly alter the nutrition of the eye. In man the abuse of diet, privations, or too debilitating a regimen, produce effects on the eye analogous to those produced on the eyes of

\* Lib. cit., p. 197. † Lib. cit., p. 367. ‡ Archives Générales, May 1847.



animals by Majendie's experiments. A flattening and withering of the cornea, in consequence of loss of the aqueous humour, has been observed after the abundant evacuations in Asiatic cholera. The same effects seem sometimes to follow the lengthened use of belladonna and mercurial frictions employed for the cure of inflammations.

After operations for cataract inflammations frequently set in, during the progress of which the aqueous humour is sometimes increased and sometimes diminished; the first is the most common case. Examples have been given of so great an accumulation that a rupture of the cornea became inevitable: but in other cases the membrane of Descemet is affected in an opposite manner, and there is an arrest of exhalation. This last result occurs especially in patients subjected to the operation who present the morbid condition of the system which has been referred to. M. Bouisson gives the details of two cases in illustration. He remarks that, in some subjects after the operation for cataract, the morbid diminution of the aqueous humour may become permanent, and contribute to the loss or permanent weakness of the sight. *Signs.*—The most prominent are—1st, a flattening of the cornea; 2dly, a withering of the cornea, a consequence of the flattening; 3dly, opacity of the periphery of the cornea; 4thly, a change of form of the anterior chamber. After the loss of the aqueous humour the iris is generally pushed forwards by the crystalline and vitreous humours against the under surface of the cornea, so as to efface the anterior chamber. When a certain quantity of the humour still remains in the chambers, it occupies the most dependent part, and here it separates the iris from the cornea more than at the upper part. The diaphragm formed by the iris, instead of being perpendicular to the antero-posterior axis of the eye, is inclined from above downwards, and from before backwards. The most elevated part of the chamber contains only a humid vapour, which slightly tarnishes the cornea, and the aqueous humour is disposed like the fluid in hypopyon. This is best observed in the lateral examination of the eye. 5thly, *Oscillations of the iris.*—This remarkable symptom of defect of the aqueous humour is observed in a very marked degree in many patients. It is very frequent after the flow of a large quantity of the vitreous humour, or when the state called *synchisis* exists—a disease, M. Bouisson states, in which the hyaloid cells are destroyed by a kind of dissolution, and can no longer retain the vitreous humour. The same thing occurs when the aqueous humour is partly evacuated, and no longer furnishes to the anterior plane of the iris the support which is as necessary as that which it receives from the vitreous humour. The defect of this humour favours oscillation so much the more readily, as the small quantity of liquid which remains in the chambers acts easily on the iris, by passing from one chamber to the other through the pupil. 6thly, *Atony of the eye and its dependencies.*—We may judge of the existence of this languor in the nutritive functions of the eye by the non-regeneration of the aqueous humour, or by the slowness with which nature repairs the loss of this fluid. The discoloration of the conjunctiva and of the free borders of the eyelids, the paleness of the caruncula lachrymalis, that of the face even, and the leaden tint of the inferior eyelid, are the sensible witnesses of this kind of local anemia, the existence of which frequently coincides with general debility of the constitution, produced by blood-letting or mercurials, by diet insufficient in quantity, or deficient in quality, or by other hyposthenic influences. 7thly, *Presbyopia.*—This disturbance of vision results from the changes effected in the eye by the defect of the aqueous humour. There is a shortening of the antero-posterior diameter of the eye, a change in the form of the cornea, frequently a trembling of the iris, and, after the operation for cataract, an absence of the lens. M. Bouisson describes minutely the effect which these changes must have upon vision, and various pathological phenomena which, he states, have been hitherto ill-understood.

*Treatment.*—The treatment of the disease must be determined by the nature of its cause. When it has resulted from an accidental discharge from a wound, the repose of the organ, the abstraction of light, and all the ordinary precautions calculated to favour cicatrization will suffice for its prompt reproduction. If it has succeeded an ulceration of the cornea, the specific cause of the ulceration must be treated, and at the same time endeavours must be made to promote the cicatrization of the cornea by cauterizing with nitrate of silver, or sulphate of copper.

Lastly, if the defect of aqueous humour occurs spontaneously, or succeeds an operation, particularly that of cataract, the general and local disposition by which it has been influenced must be determined. This predisposition being of an asthenic character, the indication of supporting the powers of the organism and stimulating the ocular apparatus, is thus established. This indication may be fulfilled in various ways. Collyria, containing sulphate of zinc, wine of opium, and rose-water, are very useful. Professor Rosas, of Vienna, has employed the following collyrium: 50 centigrammes of sal ammonia, or alum, 20 drops of alcohol, and 120 grammes of distilled water. Tonic fomentations, such as infusions of sage or camomile, used ad libitum, and kept on the eye with compresses, may be useful. Similar advantages may result from spirituous fomentations, as of eau de Cologne, &c., and the use of aromatic scent-bags, containing rosemary, thyme, &c., since the patient will frequently apply them for a long time without inconvenience. To these means may be added blisters to the temples, or over the eyebrows, which should be frequently renewed, particularly if they produce greater tension in the eye, which is a sign of the reproduction of the aqueous humour. To these local means may be added galvanism to the periobital tissues, and such remedies as are calculated to raise the vital powers of the system: ferruginous preparations, quinine, gentian, and other bitters. M. Bouisson suggests that instillation of water between the eyelids, as suggested by M. Mamoir, may be useful when the cornea is intact; since it is possible that keeping the eye moist may oppose the exosmosis of the aqueous humour through the cornea, and accordingly favour the reappearance of the membrane of Decemet within its cavity.

28. *Paracentesis of the Eye*.—As we have referred to this operation more than once, which Mr Jones very carefully describes, but is not very favourable to,\* we may here state that Desmarres believes it has been too much neglected, and that it demands most serious attention. It has been employed in general for the evacuation of blood and pus in the anterior chamber; it has been recommended for the purpose of depressing opaque or pellucid staphylomata, and to diminish the volume of the eye in hydrophthalmia: it has been advised also in inflammations of the membrane of the aqueous humour. Dr. Desmarres does not contest its utility in most of these cases, but he believes that this little operation may be of the greatest possible service under other most important circumstances.† Paracentesis is done in two ways: 1st. An ordinary cataract-needle, or the point of a keratome, is placed on the external circumference of the cornea, and pushed into the anterior chamber: a little rotatory motion of the instrument on its axis separates the lips of the wound, and the aqueous humour escapes. This is the operation described, with some modification, by Mr. Jones. 2dly. Beer's lance-shaped knife, or a particular trocar, or simply an ordinary lancet, is plunged into the sclerotica, a little below the transverse diameter of the globe, and in such a manner that one of the cutting edges of the instrument is placed forwards and the other backwards. The wound made in the direction of the fibres of the external rectus muscle presents its anterior angle two or three millimetres from the cornea. Desmarres has thus employed paracentesis: 1. In internal inflammations of the eye, after operations for depressing the cataract, or after dilaceration of the capsule. In one case of violent inflammation of the eye, with hypopyon, active antiphlogistic treatment was adopted without much effect. On the tenth day the eye was punctured by the sclerotica: a great quantity of aqueous humour flowed out, and the patient in half an hour was greatly relieved. From this moment all the inflammatory symptoms disappeared, and the hypopyon was promptly absorbed. In another case there was complete anisotropia eighteen years after the depression of a cataract in the right eye, a lenticular cataract in the left eye, adherent to the iris throughout, except below and outwards: the iris was discoloured in both eyes. Dilaceration of the capsule was performed in the left eye. Eighteen days after which violent internal ophthalmia set in; paracentesis by the sclerotica was performed, and the aqueous humour evacuated: the inflammation immediately subsided, no further serious accident resulted, and the loss was completely absorbed. In a third case there was old double amblyopia, the consequence of chronic in-

\* Lib. cit., pp. 44, 97.

† P. 772.

flammation of the internal membrane. A lenticular cataract developed itself, and became complete in three days. Dilaceration of the capsule was performed. On the eighth day the patient was seized with violent pain, the eye was red and weeping, and the sclerotica was injected; the pains had only set in two hours. Paracentesis was performed, and the aqueous humour evacuated: the relief was instantaneous, and continued for three days; but after this the inflammation returned, and a second operation was performed; from which time the absorption of the lens went on regularly, and the patient was rapidly cured.

Desmarres resorts to the operation for the purpose of preventing hernia of the iris, staphyloma, and ulceration of the cornea, and in acute retinitis and congestive amaurosis.

### § IX.—*Diseases of the Iris.*

The articles in Desmarres' work under this head are—1. *Coloboma*; 2. *Multiplied Pupil*; 3. *Accidental or Spontaneous Separation of the Iris*; 4. *Absence of the Iris*; 5. *Congenital Spots and Accidental Tints of the Iris*; 6. *Anomalous Vessels in the Iris*; 7. *Trembling or Oscillation of the Iris*; 8. *Punctures*; 9. *Incisions*; 10. *Ruptures*; 11. *Contusions of the Iris*; 12. *Foreign Bodies in the Iris*; 13. *Hernia of the Iris through the Cornea*; 14. *Adhesions or Synechia of the Iris*; 15. *Obliteration or Atresia of the Pupil*; 16. *Staphyloma of the Iris*; 17. *Mydriasis*; 18. *Myosis*; 19. *Tumours of the Iris*; 20. *Iritis*; 21. *Operation for Artificial Pupil*. In Mr. Jones's Manual these affections of the iris are greatly scattered. We find iritis in the second section of the chapter on ophthalmic inflammation; iritis, again, including scrofulous iritis, rheumatic iritis, &c., constituting a genus of the second order of the third section of the same chapter; operations for artificial pupil constituting the third section of the third chapter; myo-is and mydriasis in the fourth chapter; injuries of the iris in the eleventh chapter, &c. &c.

29. *Iritis*.—Desmarres admits a primary and secondary, an acute and chronic, a partial and general iritis; the inflammation may be confined to the external surface, and is then a partial inflammation of the membrane of the aqueous humour; to its posterior surface, constituting uveitis; or it may extend sooner or later to the parenchyma, constituting parenchymatous iritis; but the species admitted by authors under the heads essential—rheumatic—gouty—scrofulous—scorbutic—syphilitic—pseudo-syphilitic—mercurial—traumatic iritis, &c., ought to be discarded.

This illustrates how completely the work before us tends to revolutionise the principles of ophthalmic medicine and surgery introduced and generally adopted in this country from the Germans. It is impossible for us to do justice to the author in support of his own principles. We can only convey to our readers a few of the more prominent points of his argument, which we have endeavoured to effect under several heads in this Report.

The specific causes of iritis, according to authors, are so numerous that the varieties of the disease are infinite, varieties which, notwithstanding the contrary doctrine taught by Beer and his disciples, cannot be recognised by their physical characters. In France, Desmarres states, the superannuated doctrines of Beer are no longer admitted. Who will now believe that in what is called rheumatic ophthalmia the pupil is perpendicularly oval—that it is transversally or perpendicularly oval in the pretended gouty ophthalmia—that it is oblique from below upwards, and from without inwards, in syphilitic ophthalmia—when the authors who have adopted these distinctions admit that the inflammation may be seated rather in one point of the iris than in the other? It is not to be denied that a general affection, of whatever nature, may modify an ophthalmia, but all must now deny that such affections are marked infallibly in the eye by appreciable physical characters. Even in syphilitic iritis, which more than any variety might appear to make an exception to these views, the symptoms are generally the same as those of iritis in general. Authors have said that in this variety a marked swelling of the inner circle of the iris, and a greenish tint resembling that which occurs in eruptions on the skin, are observable, with many other peculiarities; but all the characters of syphilitic iritis, without one exception, are met with in simple iritis, and in individuals who have never had syphilis—the peculiar colour of the inner



circle of the iris just referred to among the rest. What are called condylomata of the iris, although rarely, are still met with in the simple affection, which seems to destroy their value as an anatomical symptom characteristic of syphilitic iritis. The pains, increased at night, which are noted in syphilitic iritis, are precisely of the same character in simple iritis. Desmarres admits that all the signs of syphilitic iritis taken together may by chance lead to the assumption of a secondary or tertiary syphilis; but an attentive examination of the patient, the existence of indurated chancres, syphiloides, &c., can alone furnish conviction to the practitioner, and the same is true of all the other special varieties of iritis, with this difference, that the anatomical characters which have been given by authors as pathognomonic of these varieties, are much less marked, and have necessarily less value, and that the general examination of the patient is even more indispensable, and this is especially the case in the pretended rheumatic, arthritic, and scrofulous varieties of the disease.

30. *New Method of Reduction of Hernia of the Iris.*—This consists simply in cauterizing a spot, at a distance from the hernia, with nitrate of silver; it is based on the following data:—1. Hernia of the iris through the cornea does not become disorganized for some days. 2. The protruded iris, irritated by the contact of the tears or the air, or by the friction of the superior eyelid, or even of the edges of the ulcerated cornea in which it is imprisoned, has a tendency to swell, and the irritation and swelling prevent morification and *arrest cicatrization*. The progressive engorgement of the iris is proved by observation: If a recent hernia be touched with an irritating body, it instantly acquires three times its original size; and if we watch the progress of cicatrization in the ulcer of the cornea, the hernia being un-reduced, the pupil is found to diminish by degrees, and even to disappear. 3. Adhesions are established between the iris and the cornea before the iris is disorganized: for a few days these are very weak, and may be destroyed at once (*by augmenting the vascular action of the parts which furnish them* or by a new inflammation developing itself in another part of the eye. 4. The materials of adhesion are in the first instance furnished by the cornea; the cornea is in a morbid state at the point at which the healthy iris protrudes. 5. These materials are derived from the divided vessels of the ulcer, the origin or base of these vessels being at the circumference of the cornea. 6. By irritating the part in which the base of these vessels ramify, the secretion at the edges of the ulceration is augmented; in this way a fluid secretion may be induced around the hernia, which will destroy the imperfect adhesions, and give freedom to the iris in the ulcer, which latter is augmented in size by the secretion. 7. By putting the iris under the influence of belladonna before producing such an irritation mechanically, we obtain a power, placed behind the cornea, acting from before in a direction backwards, and capable of reducing the hernia.

After this beautiful chain of pathological reasoning, Desmarres states: A portion of the iris having projected through an ulcer of the cornea, and instillations of belladonna having been used for some days without any beneficial result, it may be inferred that the pupil has been rendered as large as possible by this agent, when the operator proceeds thus:

The upper eyelid being held by an assistant, and the lower eyelid depressed with the index-finger of the left hand, he applies with the right hand the point of a pencil of nitrate of silver to the conjunctiva of the bulb, close to the cornea, and cauterizes it in three or four points as energetically as possible, without penetrating the mucous membrane too deeply. A very active irritation of the vessels which feed the ulceration of the cornea is thus provoked, and the secretion necessary to set the iris free is the result. Sometimes, instead of points, a line of cauterization is made in the neighbourhood of the hernia, and in some instances, where the first cauterization has failed, after an interval of two or three days, a second, third, or fourth, even on the cornea, but taking the greatest care that the caustic does not extend to the iris, otherwise the hernia would at once be increased. In a rare instance success was not obtained until after the eighth application; but the reduction is generally effected after the first, second, or third. Desmarres has succeeded in so many instances by this method, that he has ceased to count the operations.\*

\* Lib. cit., p. 397.

§ X.—*Diseases of the Vitreous Humour.*

These are—1. *Hyalitis, or Inflammation*; and, 2. *Synchisis, or Softening of the Vitreous Humour*.\*

31. *Sparkling Synchisis.*—In addition to the ordinary or simple synchisis, Desmarres has given this name to a variety which presents very unusual symptoms—the appearance at the bottom of the eye of a multitude of brilliant spangles, shining like a diamond, and unaccompanied with any alteration of sight.

Desmarres presented to the Academy two patients thus singularly affected; both had been operated upon for cataract; minute sparks were seen, very numerous, and recurring incessantly, at the bottom of the orbit; they were most remarkable in one of the patients, appearing as if suspended at the bottom of the eye, and remaining visible for many seconds. In the other case, on the contrary, the sparks fell back behind the iris; when the eye was in motion they increased in number, and they then appeared in such quantity that the whole eye was bespangled with these microscopic luminaries. Dr. Desmarres refers the appearance to a softening of the vitreous humour, accompanied with minute scales of the hyaloid membrane remaining transparent, but being folded upon themselves, and reflecting instead of refracting the light.†

In a paper read before the Royal Academy of Sciences of Paris, on the 19th of July, M. Bouisson informed the Academy that, in some researches entered into by him on the composition of the vitreous humour, he had recognised the existence of a fatty matter, in such a state of minute division that the transparency of the humour was not in general affected by it; and if this result be taken in connection with the fact that crystals of cholesterine have been found in the posterior chamber of eyes which have for a long time been affected with blindness, we are naturally led to the conclusion, that in the normal condition of the eye, a certain quantity of fatty matter is contained in the vitreous humour. This M. Bouisson thinks may be separated in a crystalline form by some peculiar pathological influence, and may present that apparent mobility at the bottom of the eye which arrests our attention in those cases.‡

M. Malgaigne and M. Tavignot also refer the phenomenon to the presence of molecules of cholesterine in the vitreous humour, supporting the view of M. Bouisson, of Montpellier.

A woman was admitted into the Hospital Beaujon. One day she complained of pain in the right eye, which led to the discovery of the following appearances. When this eye moved, the iris was tremulous; a circumstance which, according to M. Robert, always denotes either absence of the crystalline lens, or softening of the vitreous body, though, strictly speaking, the alteration is confined to the hyaloid membrane. In this patient the pupil was round, and slightly movable, and dilated a little on the opposite eye being closed. Behind the pupil were perceived two little, whitish, opaline plates deeply seated, and consisting of portions of hyaloid membrane, not of the capsule, which would be opaque, and situated more forwards. On looking into the eye, sparks were seen to pass from time to time; opposite these plates they were fixed, and did not change their situation. On this account M. Robert is of opinion that these sparks must be due to the reflection of light from the hyaloid. Bodies completely transparent possess a certain reflective power when the light falls on them at particular inclinations. This explanation, like the others, is only an hypothesis, and as the disease is beyond the reach of art, may be regarded as only a matter of curiosity.§

From a very accurate examination of the phenomenon, made by Mr. A. B. Stout, of New York, in the same case from which Desmarres describes the affection, he has arrived at the following conclusions:

1. That the movable spangles are truly bodies in the vitreous humour, which possess considerable weight, and being projected by the working of the eye, traverse the vitreous humour, and then fall, according to the direction of gravity.

\* Desmarres, p. 663.

† Gaz. Méd., June 26, 1847, p. 519.

‡ Dublin Med. Press, Wednesday, Sept. 8, 1847, p. 148. M. Bouisson on the Pathology of Synchisis.

§ Gazette des Hôpitaux.

2d. That these bodies are crystalline and transparent, since they have an angular contour, and their presence before the pupil, or at the bottom of the eye, does not prevent vision, nor produce *muscae volitantes*. If they were opaque they would be visible; they would absorb the light, and then the reflection from their surfaces would be much less brilliant. 3. That the sparkling is attributable to these small, transparent, crystalline bodies acting as so many prisms, which, as their faces are turned, on the one hand, towards the incident rays of light, and, on the other hand, towards the eye of the observer, or during their motions of rotation are placed in favourable conditions not only to refract but to decompose the light, they thus produce prismatic sparks in relation to the rays which reach the eye.

32. *Nitrate of Silver in Ophthalmic Affections.*—In the work from which we have so freely quoted, the nitrate of silver is one of the remedies most frequently resorted to, and in many of the most desperate diseases it is employed heroically. There can be no doubt that, in the experienced hands of Professor Desmarres, it is a remedy which frequently acts *cito, tuto et jucunde*, at the same time it is obvious, from his own remarks, that in inexperienced hands, or if inappropriately applied, it may produce the most unendurable pain, and the most destructive results. Other writers have guarded practitioners against its consequences, and in particular Mr. Lawrence has furnished the profession with a wholesome caution on this point, in the following practical remarks on the use of lunar caustic in ophthalmia.\*

There are three modes. Mr. Lawrence states, in which the nitrate of silver is employed in eye affections: 1st. In solution, varying in strength from two to twenty grains to the ounce. 2d. In substance. 3d. In the form of ointment. In determining on its employment in inflammation of the eye, it should be borne in mind that the question is not like that of using an ordinary lotion, which will do neither good nor harm. A single application will often excite active inflammation. If the use of the nitrate of silver in the ten-grain ointment, or in strong solutions, be repeatedly continued, it is capable of exciting a peculiar inflammation of an obstinate kind, attended with change of structure in the membrane, and leading to other alterations injurious, or even fatal, to vision. This kind of inflammation is so peculiar, that it almost deserves to be named from its exciting cause, lunar caustic ophthalmia. The conjunctiva becomes thickened and indurated; its papillae undergo a kind of hypertrophy, and project upon the surface of the membrane, which thus loses its smoothness and polish, becoming granulated. These granulations are most numerous on the reflected portion of the membrane. The friction of this rough surface on the cornea enlarges its vessels, so that they admit no blood, and become tortuous; it causes also interstitial deposit and opacity, and even ulceration.

The inflammation thus induced varies in intensity. In the most active state the membrane is bright red, and produces a viscid puriform discharge, which agglutinates the lids. There is a gritty feel in the eye, with pain on motion of the lids, and on exposure to light. Hence the eye is kept closed, or only opened momentarily, so that the patient is, to all intents and purposes, blind as long as this state continues. In the chronic state the vascular congestion is less active, and the membrane paler; but the eye is weak, and will not bare exertion, and vision is more or less imperfect, from opacity of the cornea. The latter change is sometimes partial, the lower segment remaining transparent. The conjunctival lining of the lower lid is hardly rough, while that of the upper may be granular throughout.

Three cases are given by Mr. Lawrence in illustration of the serious consequences which occasionally supervene upon the injudicious use of the lunar caustic. The treatment of the condition in question is thus stated:

The restoration of the membrane to its natural condition is, perhaps, not practicable; it is difficult even to improve it so far as to prevent continued irritation of the cornea. It may be rendered tolerably smooth; but it remains thickened and hardened, and presents a white appearance, like a cicatrix, where it had been previously granulated. Moderate local depletion, with cold or tepid applications,

\* Med. Gaz., July 11, 1845.



is advisable when an active state of vascular disturbance is indicated by bright redness of the conjunctiva, with pain and intolerance of light. Under other circumstances, scarification of the diseased membrane, excision of the more prominent with scissors, and mild astringent applications are proper. Of the latter, the liquor aluminis comp. of the London Pharmacopœia, diluted in the first instance; the liquor plumbi diacetatis, and the weaker solutions of lunar caustic, are the best. The sulphate of copper may sometimes be cautiously used in substance. If any of these applications bring on a relapse of inflammation, they must be discontinued until the disturbance is removed. The citrine or the red precipitate ointment should be applied to the edges of the lids. Counter-irritation to the back of the neck is likewise useful.

33. *Nitrate of Silver in Purulent Ophthalmia.*—M. Vallez has also directed attention to what he believes to be injurious effects of the local employment of nitrate of silver in purulent ophthalmia; he speaks of its insufficiency, of the irregularity of its action, and of the violent pains which it produces, and he affirms that individuals have lost their sight by its employment. Without rejecting its use altogether, he recommends, when direct cauterization of the parts is indicated, that a stick of nitrate of silver should be covered with muslin, particularly when we have to apply it to the transparent cornea. Muslin or a piece of cambric, as soon as it comes in contact with the conjunctiva, absorbs its humidity, and thus prevents the irregular diffusion of the action of the caustic, at the same time the indirect effect of the lunar caustic takes place gradually on the part touched. If the individuals are intractable, it is best to accelerate its action by previously moistening that portion of the covering which corresponds with the caustic. In this manner we avoid an accident which not unfrequently occurs, viz., some particles of the caustic detaching themselves, and producing intense cauterization of the part on which they fix.

Immediately after the application M. Vallez passes a pledget, steeped in oil, on the part touched, to prevent the stiffness of the eyelids, and to facilitate their motion over the globe of the eye.\*

The editor of the Gazette remarks, that this mode of applying the caustic may have its advantages, particularly when the object is to obtain a slighter effect, as in cases of very chronic inflammation, where we wish to stimulate a large surface rather than to cauterize, properly so called.

We have passed over the articles relating to affections of the capsule and lens, and artificial pupil, with a few others, which, according to the arrangement adopted, should have been included in the present volume, since they demand a much more lengthened notice than our space admits of; but they will enter into the concluding part of this Report in our next volume.

Dr. Smith's "Treatise on Fractures in the Vicinity of Joints, and on certain Forms of Accidental and Congenital Dislocations," will afford us the opportunity of placing before our readers some most valuable practical matter on these subjects in our next Report.

(*Erratum.*—In the Report on Aural Surgery in our last Volume (p. 273-4) the name of Mr. Crosse, of Norwich, has been several times substituted for that of Mr. Toynbee. All the dissections of the ear there referred to were made by Mr. Toynbee, Mr. Crosse having only furnished the latter gentleman with the ears of a deaf and dumb person for dissection. The error originated with our weekly cotemporary, from whom we quoted the article.—H. A.)

\* Gazette Méd. de Paris, Avril, 1847.

### III.

## REPORT ON THE PROGRESS OF MIDWIFERY, AND THE DISEASES OF WOMEN AND CHILDREN.

BY THE EDITOR.

THE readers of the "Half-yearly Abstract," having the opportunity of tracing with facility the movements of the profession in each department of medical practice, cannot fail to notice that, in respect of the practical importance, as well as scientific interest of the communications, Midwifery, and the Diseases of Women and Children hold a prominent place. The proceedings of the past six months will, we are assured, bear comparison with those of any former period, in proof of which we would only refer to the information on the subject of the inhalation of ether in midwifery; the discussion on the subject of placental hemorrhage; and the influence of ulceration of the os and cervix uteri on the different functions of the female reproductive organs. The latter subject will be prominently laid before our readers, in our analysis of a work recently published by Mr. Whitehead of Manchester.\*

In the distribution of the matter contained in the present Report we shall follow the arrangement adopted on previous occasions.

#### § I.—*Diseases of Women Unconnected With Pregnancy.*

Much valuable information connected with the present section of this Report is to be found in the volume to which we have just alluded, and it will therefore be advisable to lay before the reader a brief sketch of the scheme and objects of that work, previous to entering upon the consideration of individual diseases.

Although professedly a treatise "On the Causes and Treatment of Abortion and Sterility," Mr. Whitehead's production embraces a far more extended field, as may be seen by a reference to the table of contents. The first and second chapters, for instance, occupying a hundred pages, are mainly taken up with the physiology of menstruation, including the signs of puberty, properties, quantity and source of the menstrual blood, age at which the function commences and ceases, influence of climate, occupation, &c. It also gives us the nature of the vaginal mucus, and its reaction upon the menstrual blood, all of which, though not suited to the present Report, afford matter which is extremely worthy of perusal. The third and fourth chapters discuss the diseases of menstruation, and chap. v the signs of pregnancy. Chaps. vi, vii, viii, and ix are occupied by the subject of abortion. The last chapter is devoted entirely to the consideration of the causes and treatment of sterility.

In his introductory chapter, Mr. Whitehead makes some general remarks upon the importance of diseases of the uterine neck, and the little attention which they have attracted in this country. In these remarks it appears that the author has scarcely done justice to a labourer who had preceded him in the same line of physiological study, and whose important investigations we have on several occasions been called upon to notice. It is satisfactory, however, to know, from correspondence upon the subject, that there was no intention on the part of the author to underrate or pass over Dr. H. Bennet's valuable communications; but that, in fact, the investigations of the two writers were carried on simultaneously and independently of each other. That Dr. Bennet had the precedence in noticing the

\* *Causes and Treatment of Abortion and Sterility.* Lond. 8vo. 1847.

point in dispute, viz., the influence of ulceration of the os and cervix in producing abortion, is undeniable (see Half-yearly Abstract, Vol. IV., p. 147); and even he was forestalled by MM. Boys de Loury and Costilhes (Abstract, Vol. II. p. 132), whose communication on the subject appeared in the "*Gazette Médicale*," June, 1845.

The author, after some remarks on the speculum, alludes to an instrument of his own devising, by means of which, injections and other applications to the cervix uteri can be made by the patient herself. In another portion of his work he mentions the difficulty in causing injections used in the ordinary manner to reach the part affected, stating what any one may readily convince himself to be true, that the vaginal walls are applied so closely to each other, that it is next to impossible for the fluid to be projected the whole length of the canal by ordinary apparatus. It was in order to do away with this difficulty that he invented his "prolapsus tube." The instrument is made of glass, and is a cylinder measuring about five inches and a half in length, with an internal calibre of an inch at its uterine end, and gradually diminishing downwards to within an inch of its outer extremity, when it expands into a bell-shaped orifice. To this latter extremity a triangular wing is adapted, projecting near three inches from the tube at its outer orifice, whence it gradually diminishes in elevation as it approached the shaft of the tube in a curved form. This curved wing is kept next the pubis when the instrument is introduced, and guides it along the vaginal canal. The instrument being first introduced, injections or medicated pledgets of lint may be applied with certainty directly to the cervix uteri.

1. *Diseases of Menstruation*.—Mr. Whitehead treats of the diseases of menstruation under the usual divisions of retarded menstruation, suppression of the menses, difficult menstruation, and menorrhagia. Under the head of amenorrhœa we do not find anything to detain us.

2. *Dysmenorrhœa*.—Mr. Whitehead's remarks on this anomaly of the menstrual function are brief, their chief value consisting in the narration of a case in which the dysmenorrhœal symptoms were associated with a fissured ulceration of the os uteri. The author, however, omits to state whether any improvement ensued from treatment directed to that lesion.

The occasional dependence of dysmenorrhœa upon ulceration of the os and cervix is much more distinctly enunciated by Dr. Edwards, of Bath, whose communication will be found among our extracts (art. 85).\*

3. *Vicarious Menstruation*.—Under this disease Mr. Whitehead relates four cases. In the first, the menstrual discharge was replaced by epistaxis; in the second, by leucorrhœa; in the third, by periodical bleeding from an ulcer; and in the fourth, by diarrhœa.

—A case is narrated by Dr. Barham, in which the discharge was periodically replaced by purpurous spots on the skin, and with bleeding from the gums, nose, and other mucous membranes. It appears to have resisted treatment †.

4. *Menorrhagia*.—On this subject also Mr. Whitehead is brief. He distinguishes *menorrhagia*, in which the hæmorrhage is only an exaggeration of the menstrual flux, from *metrorrhagia*, in which the bleeding may occur at any period, and arises from diseased surfaces about the neck of the uterus, and seldom comes from the interior of the organ. This latter form is frequently seen at the last menstrual crisis.

—In the treatment of menorrhagia, Dr. Mitchell has derived great benefit from the Indian hemp, in doses of ten minims of the tincture every four hours. He states that sometimes the first dose will check a discharge which has lasted for months. It is stated to be equally beneficial in the debilitating draining which sometimes occurs during pregnancy.‡

5. *Diseases of the last Menstrual Crisis*.—Mr. Whitehead's observations on this subject are well worthy attention, as they tend to elucidate a class of ailments to which the practitioner in general pays little attention. The forms of disease most commonly met with at this period, Mr. Whitehead states to be three, each differing in the character of the accompanying discharge, and in the amount of consti-

\* Prov. Med. Journ., Sept. 8.

† Prov. Med. and Surg. Journ., Aug. 25, 1847.

‡ Dublin Med. Press, Oct. 6, 1847.



tutional suffering. The *first* is characterized by a muco-purulent discharge, generally denominated leucorrhœa: the *second*, often by vaginal hemorrhage, differing both in its properties and source from the menstrual product; the *third*, by watery, sanious, or serous, and generally fetid discharges.

In reference to the first form, the author states, in accordance with Dr. H. Bennet, that purulent leucorrhœa is to be regarded as evidence of disease, which for the most part is found on examination to consist in hypertrophy of the cervix, with ulceration of the os uteri. The most common form of ulcer is stated to be the simple granulating ulcer, with a defined margin. In addition to this, another condition of the uterus exists, to which the author, by an unseemly amalgamation of Latin and Greek, has denominated *endo-uteritis*, instead of the correct term, *endometritis*.

This condition consists in inflammation of the lining membranes of the uterus, and gives rise in the first instance to a glairy discharge, which afterwards becomes purulent. The only evidence of this disease exhibited by internal examination is a bright red ring surrounding the orifice of the os tincæ, with the escape of the characteristic product. The symptoms are all defined, being chiefly lassitude, with the anomalous pains and sensations common in spinal irritation. The treatment consists in leeching, and subsequently the introduction of a weak solution of the nitrate of silver into the cavity of the womb, or an ointment of the same material. The operation of injecting the womb is performed by a long-nosed syringe, with the aid of the speculum. Contrary to the opinion expressed by Dr. Oldham (see Report on Midwifery. Half-yearly Abstract, Vol. V. p. 242), Mr. Whitehead regards the proceeding as entirely without risk.

2d. Hemorrhage from the uterus is not uncommon in women who have ceased to menstruate. This depends, according to the author, upon venous congestion of the os and cervix, which may either terminate in varicose ulceration, or in the more severe event, uterine phlebitis.

3d. The diseases accompanied by fetid discharge are those familiarly known as cauliflower excrescence, cancer, &c., and need not be enlarged upon. The author cautions us against deciding on the existence of malignant disease from mere fetor of the vaginal discharges.

6. *Ulceration of the Os and Cervix Uteri*.—Our Abstracts (arts. 83, 84, 85) contain several valuable communications by Dr. H. Bennet and Dr. Edwards on the existence of the lesion in the virgin and in females of advanced life. In Mr. Whitehead's work we have likewise a full description of the different forms of ulceration as causes of abortion. These we shall mention more fully at a further page.

7. *Cauliflower Excrescences*.—Dr. Renaud has recently contributed an account of microscopical examinations of this morbid growth, showing it to be a modification of encephaloid, consisting of tufts of pedunculated capillaries, the interstices of which are filled up with the cells proper to encephaloid products. In the belief that the cauliflower excrescence has a malignant origin Dr. Renaud is at variance with Mr. Safford Lee, the last writer whose opinion we had occasion to notice (see Abstract, Vol. V., p. 244), and in which opinion we are disposed to join, as we consider that we have stronger grounds of belief in the non-malignant character of the growth from the period of life at which it occurs, the little sympathy which the system exhibits till it is prostrated by repeated hemorrhage, and from the results of ligature, &c., than we have to believe in its cancerous nature from the uncertain evidence afforded by the existence of nucleated cells.\*

8. *Non-malignant Disease of the Uterus simulating Cancer*.—Dr. Shearman, of Rotherham, has recorded three interesting cases, which prove the necessity of caution in our prognosis of uterine disease, even in cases apparently of the most marked character.

The first case is that of a single lady, æt. 48, who consulted Dr. Shearman for the relief of pains produced by what her medical attendant called cancer of the womb. For the last two years she had suffered from occasional sharp pains in the back and loins, shooting down the front of the thighs, with frequent discharges of sanious fluid mixed with blood. Latterly the pains assumed a periodical type, commencing about seven in the evening and continuing till six the next morning,

\* Med. Gaz., June 18, 1847.

when they entirely subsided. She was emaciated, and had the peculiar sallow and anxious face so often seen in scirrhus uteri. She was examined, and the os and cervix found to be normal. Dr. Shearman pronounced the case not to be cancerous. About June, 1846, Dr. Shearman was again sent for, and found the patient further emaciated, constantly bleeding from the uterus, with aggravated nocturnal pains. He succeeded in dilating the vagina, and afterwards introduced Simpson's uterine sound into the uterine cavity for a space of five inches. The os uteri was subsequently dilated with a sponge tent, when a tumour came into view, which was accidentally enucleated by the manipulation of the sound during a subsequent examination; the tumour proved to be fibrous. The nature of the disease was thus made clear.

The second and third cases were also instances of fibrous tumour. They were all remarkable for the severe constitutional symptoms to which they gave rise, and more especially for the periodicity of the pain by which they were accompanied.\*

9. *Ovarian Tumour*.—In the "Provincial Journal" of July 14th we have the account of a case of ovarian dropsy which was cured by Mr. Brown's plan of treatment, which, as the reader may remember, consists in the combination of bandaging, tapping, mercurial action, and the exhibition of diuretics. In the case in question the patient was nearly lost under the constitutional irritation of the mercury, and subsequently from an attack of fever, apparently caught from one of her children. On her recovery from this the tumour had disappeared. Mr. Hunt, of Herne Bay, who narrates the case, suggests that the mercury might be omitted, as had been previously conceded by Mr. Brown. (Abstract, Vol. V. p. 246.)

—Two cases of ovarian tumour are reported in the "*Philadelph. Med. Examiner*," August, in one of which a spontaneous cure took place by ulceration of the sac, and evacuation of its contents by the rectum; in the other, dispersion of the tumour was effected by the external use of iodine ointment, and the internal exhibition of the muriate of lime.

—The same journal also contains the sequel of the remarkable case of which we gave an account in our Fourth Volume, p. 261. It appears that the menses returned, and have remained regular ever since.

10. *Ovariectomy*.—A successful operation of removal of both ovaries for encysted disease has been performed by Dr. Frederick Bird. The preparations were exhibited at a meeting of the Westminster Medical Society. One tumour, which weighed upwards of twenty pounds, was of a compound character, the other was of irregular form, and made up of several distinct cysts; this tumour weighed four pounds. Both tumours were adherent to the abdominal walls, the larger one having been, in its upper portion, covered by the firmly adherent omentum, one of the arteries of which was greatly enlarged, and was ligatured. The patient experienced no untoward symptom, and rapidly recovered, menstruation having since recurred. The author directed the attention of the members chiefly to three features of the case; the probable cause of the disease, which was, in the case of the left ovary at least, to be distinctly traced to antecedent inflammation of that organ, whilst each subsequent change in the character of the disease seemed also to depend upon the accession of inflammatory states. He next spoke of the diagnosis, which, in this case, was at one period so difficult as to have induced him to defer the operation to the latest period, in the belief that the supervention of additional symptoms might render the propriety of performing it more certain. The chief difficulty arose from the loss of evidence commonly afforded by vaginal exploration, the uterus having been drawn up so far out of the pelvic cavity that it was impossible to make any satisfactory examination. The fact of menstruation having been uninterrupted by the previous destruction of the ovaries by disease, or by their subsequent extirpation, was interesting, and it was observed that, as in the present, so in the majority of such cases, there existed a marked tendency to menorrhagia. He regarded the case as useful in serving to extend the limits within which the extirpation of ovarian tumours might be successfully employed, and not less so as illustrative of the period at which the operation could alone be

\* *Prov. Med. and Surg. Journal*.

sanctioned, when the general health of the patient was beginning to sink beneath the exhausting influence of the disease.

[It is doubtful whether in the above case the sanguineous discharge from the vagina was an instance of true menstruation; we should rather consider that it was the result of varicose ulceration of the os uteri, a condition which Mr. Whitehead shows to be generally present in the so-called examples of menstruation during pregnancy (op. cit., p. 222). That true menstruation can occur independently of the maturation of discharge of ova, and consequently of the presence of ovaria, is contrary to the most received physiological doctrines of that process. (See Abstract, Vol. I. p. 273)].\*

—A successful operation for the removal of an ovarian tumour has also been performed recently in France, being the first instance of the operation in that country. The tumour was solid, weighing 6½ ounces [pounds?]. The operator, M. Workowski, preferred the short incision. The tumour originated in the right ovary, and as the woman became pregnant subsequently, and was confined of a boy, the case was considered to disprove the Hippocratic dogma that the right ovary produced male conceptions.†

11. *Diseases and Malformations of the Vagina.*—*Bifid Vagina.*—Cases of this malformation have been recently recorded by Professors Meigs and Dickson. The cases by the first writer are as follows:—Being in attendance on a lady, in labour, and finding the pains sufficiently strong, he examined the state of the os uteri, which was of the size of a half dollar, the head of the child presenting, and the ovum unruptured. In the course of an hour more he examined again, and the os uteri was then nearly dilated. While pressing the palp of the index-finger to the left side of the pelvis, it caught in a seeming bridle, which at the instant made him fear the cervix uteri had been broken, so as to detach a semicircular portion of the os uteri, for the pains had been exceedingly sharp, and their returns had been announced by violent cries. It was but a moment that he indulged the idea of a rupture of the cervix, for upon pushing the index farther, and flexing the finger, he found he could draw the point of it outwards, pulling along with it the bridle in question. Still he did not understand the case until, having withdrawn the indicator, he examined with it the structure of the external parts, and then learned that the lady was possessed of a double vagina. Supposing that such a revelation would not be agreeable to her, he kept his own counsel, hoping that the child's head would come down through the right or the left channel without injuring the septum. But after the head escaped from the circle of the os uteri, the bridle or partition would not go definitively to the left or to the right, although he thrust it first one way and then the other. The tie was so strong that the fleshy septum, extending from the anterior to the posterior columns of the vagina, would not admit of the dilatation of the lower or outer third of the tube; and as the lady was very strong, and had powerful uterine pains, he began to perceive some danger of the vagina being ruptured by the vain efforts for expulsion.

Dr. Meigs now explained to the monthly nurse and to a relative of the patient the cause of the delay, and the necessity that had arisen. He therefore procured the requisite permission to expose the parts to an inspection. Upon this, the two orifices of the vagina were seen to be exactly alike, and the partition stretched across the head from front to rear of the passage, which by it was wholly prevented from dilating.

He now with a strong scissors divided the wall by a single stroke of the instrument, whereupon the child's head advanced, dilated the os magnum, and was speedily delivered with safety to both the mother and her infant. She never complained afterwards relative to the operation, and within a month I met her on foot in the streets.

Dr. Meigs narrates a second case thus:—A week after, I was called to a lady in her 39th year, in labour of her first child. Upon examining the state of the os uteri, I found the circle not much bigger than a quarter dollar, with thin margin, and within it the penis of the child; the scrotum being detected within the os uteri after the pain ceased. As it was night I went to another apartment and slept an hour, when being called I found the os uteri very much dilated, and a buttock, near which was the right foot, presenting.

\* *Lancet*, Oct. 30, 1847.

† *Revue Médico Chirurg.*, Juin, 1847.



While inquiring into the state of the cervix, I hooked my finger into a bridle, just as I had done in the case above mentioned, and I confess that the same thought was obvious to me—viz., that she had broken off a half ring of the circle of the os uteri, but I immediately afterwards discovered that I had another case of double vagina under management. In this case the partition was very firm and thick, extending from the os magnum almost up to the os tincæ. I inspected the external structures, and the two vaginas were each perfect and alike, included within labia pudendi common to both. The female was safely delivered.

—Dr. Meigs also states that some years ago he was consulted upon a case of double vagina in a primipara. He delivered the woman through the right canal.\*

—Dr. Dickson's case is as follows: "Mrs. — came to the city, 1839, to consult me. She has been two years married—has always suffered from irregular and scanty menstruation; it is but a few months since she has become aware of the existence of some genital malformation. The vagina is divided—neither longitudinally nor transversely, but obliquely—by a membranous partition. Both tubes are long and narrow. Coition is difficult, particularly if the right (and somewhat anterior) opening be entered. The left, which is obliquely posterior, leads to the uterus, the os tincæ presenting; the right conducts to the side of the uterus in which the membranous partition loses itself; the cul-de-sac is not to be reached by the fingers; a long probe or bougie may pass up six inches or more, but gives pain, and, when withdrawn, is coated with bloody mucus. The dividing membrane lies in loose folds, is smooth and well lubricated; it projects slightly between the labia. It possesses very little sensibility."†

—A case somewhat similar to the above was also related at a meeting of the Pathological Society of Liverpool, by Mr. Burrows. "Mrs. Bright began to have labour pains at 9 p. m. December 25th, 1846. 'I saw her,' reports my assistant, Mr. Dale, 'at 5 a. m. December 26th. The pains were slight as to power, but hard to bear. When I introduced my finger into the vagina, to ascertain the state of the os uteri, I found interposed a membrane, which seemed to divide the vagina into two compartments. I then carefully passed my finger all around the vagina, to see if I could find an opening to the uterus, but did not succeed. The membrane was very thin and flaccid, so that I thought I could distinguish the os uteri through it, dilated to the size of a shilling. I hoped that the membrane would offer little resistance to the pressure of the child, and finally give way when the pains became stronger.'

"I saw her myself about 9 the same morning. On making an examination per vaginam, I was considerably puzzled; she had regular bearing pains, but I could not detect any os uteri. As the finger explored the vagina it seemed to traverse a smooth surface without any aperture or projection. Pausing and reflecting on the case, I examined again, but without obtaining any information as to the real anatomical formation of the parts, except that the vagina had no appreciable communication with the uterus. I thought that it was a case that would require some surgical operation. As the pains increased in power I felt a substance pressing against the superior parietes of the pelvis. At length, from the violence of the pains, tension and consequent thinning of the vaginal membrane, I felt through it a substance with an aperture resembling the os tincæ. I began to consider as to what means I should adopt, in order to open a communication between what I supposed to be the cervix uteri and vagina, and made another very minute examination, with the view of detecting, if possible, any slight aperture which might communicate with the uterus, but in vain. I waited till she had more pains, and as they began to increase in violence, I feared some injury might be done to the uterus or vagina if something were not done to enable the uterus to expel its contents. I explored once more the vagina, to determine what line of practice to adopt, when I was agreeably surprised at finding an aperture in the vaginal membrane, in the angle formed by the junction of the body of the os pubis with the right ischium, through which I could pass my finger, and detect the presenting part, which I found to be the breech. The os tincæ being fully dilated, and having receded from the presenting part, I determined to make an incision through

\* Philadelphia. Med. Exam., Jan. 1847.

† South. Med. and Surg. Journ., May 1847.

the obstructing membrane towards the mesial line, and downwards in the direction of the sacrum. But Nature, almost always adapting her operations to the peculiar exigencies of the case, interposed, and accomplished the solution of the continuity, much better and much more agreeable to the patient than art could possibly have done. The interposing membrane gave way to the pressure of the presenting part, precisely in the direction I had intended to open it; and it appeared to fall down upon the sacrum. I then expected to find the psoas and iliacus muscles without their normal vaginal mucous membrane; but, to my great surprise, they presented their usual pelvic surface, being covered with the membrane (by which the pelvis is formed into a distinct compartment or cavity of the body), so that the pelvis was divided into an anterior and posterior cavity, having no communication but by the small aperture above mentioned." Mr. Burrows considers it inexplicable how impregnation could have taken place under the extraordinary circumstances recorded.\*

12. *Sterility*.—The conditions of the uterine system which are accompanied by, or are the causes of, barrenness in the human female are, comparatively speaking, untrodden ground, and we therefore regard Mr. Whitehead's observations upon the subject as particularly valuable.

Putting aside malformations and defect in development of the reproductive organs, this author regards chronic endo-uteritis, or irritable uterus, as it is called, as one of the most frequent causes of sterility. The symptoms of this state, as has already been stated, are chiefly languor, pelvic and crural pains, dysmenorrhœa, leucorrhœa, &c.; and, upon specular examination, thickness of the os uteri, with an irritable ring of inflammation surrounding the orifice, from which a quantity of sanious fluid, of a peculiar odour, is discharged. The prevention of pregnancy under these circumstances may, according to the author, be occasioned in three ways; first, the inflammatory condition of the lining membrane of the womb may prevent the formation of the membrana decidua; secondly, this inflammation may extend to the Fallopian tubes, and cause their obliteration; and, thirdly, the fluid secreted by the uterus may acquire characters which are fatal to the vitality of the spermatozoa. The latter cause is presumed upon the authority of M. Donnè, who found, by experiment, that while the spermatozoa remained active for several days in healthy vaginal mucus, they perished quickly in mucus taken from women labouring under certain diseases of the uterus. The same effect is said to be produced by the vaginal mucus secreted during pregnancy, which is much more acid than in the unimpregnated state. Mr. Whitehead, however, differs inasmuch from Donnè, that he believes the death of the animalculæ in the latter case to be caused, not by abnormal acidity of the vaginal mucus, but by the absence of the uterine mucus, which possesses alkaline properties, and to a certain extent neutralizes the vaginal secretion. Mr. Whitehead endeavours to show, by experiment, that in health uterine mucus is alkaline. This opinion, as may be seen, is to a certain extent opposed to the experience of Chais-saignac and Dr. Mitchell, who believe that the secretion from the fundus is acid, that from the cervix alone being alkaline. (See Abstract, Vol. V. p. 132.)

As an illustration of the author's treatment of these cases, we transcribe the following:—

—*Sterility during four years and a half—Endo-uteritis—cure by nitrate of silver injection into the uterus—Pregnancy*.—Mrs. S., æt. 31, married at twenty-four, and miscarried about six months after. During the whole pregnancy she had been troubled with leucorrhœa, with an assemblage of symptoms which had been treated as spinal irritation. When examined four years and a half after the abortion, the lower part of the uterus was in a state of inflammatory hypertrophy: the labia were thickened and projecting, and presented the ring of vivid redness, indicative of internal inflammation. To these parts the solid nitrate of silver was freely applied, leeches were placed alternately on the sacrum and hypogastric region, and alteratives administered. At the end of three months she improved remarkably, and became pregnant.

As pregnancy advanced, however, the spinal and abdominal irritation, leucorrhœa, &c., returned. After quickening she had threatening of abortion. The

cervix was found large and excoriated. To this nitrate of silver was applied, and two grains of opium, with the same quantity of calomel, were given. On the following morning she was free from pain, and the pregnancy went on. The caustic was several times repeated; and she was delivered of a full-grown child.

After confinement, the same trace of nervous and uterine symptoms continuing, and not being remedied by change of air, she was again examined with the speculum. The cervix presented the same aspect, but the opposing margins of the labia were flabby and fringed with granulations. A weak solution of nitrate of silver was now injected into the cavity of the uterus. The operation, which did not cause the least pain, was attended with the most gratifying results; all irritability ceased, and after one repetition of the injection her health became perfectly re-established.\*

—The same state of the uterus, and its connection with sterility, has previously been pointed out by Dr. Ivory Kennedy, under the title of "Uterine Catarrh." His observations appeared in the "Dublin Quarterly Medical Journal," of February, 1847, and were transcribed in our last Volume, p. 131.

### § II.—Pregnancy—Labour—The Puerperal State.

13. *Signs of Pregnancy*—The fifth chapter of Mr. Whitehead's volume enters with considerable detail into this subject, which he justly regards as one of the greatest importance. How difficult it is, in some instances, to ascertain the fact of pregnancy, even in its later months, and how readily the most experienced practitioner may be deceived, has recently received a most remarkable illustration in a case which will be found amongst our Extracts (art. 90).

Mr. Whitehead treats of the signs of pregnancy under three heads: 1st, the organic changes; 2d, functional deviations; 3d, sensorial manifestation.

*Organic Changes.*—In order to have a clear conception of the changes assumed by the gravid uterus, Mr. Whitehead gives us an account of the appearances presented by the virgin uterus, illustrated by engravings. The characteristic of a healthy unimpregnated uterus, as revealed by the speculum, is stated by him to be a *linear state of the orifice*, the labia being smooth and in close apposition. The alteration of this form affords, according to the author, the only test capable of revealing pregnancy with certainty previously to the time at which auscultation becomes available. What this alteration is the author proceeds to describe. It consists, he observes, in the gradual loss of the linear form, and a dimpling in of the orifice, which becomes more circular and patent. At six or eight weeks it has become oval, or distinctly circular, with a more or less uneven outline, according to the number of pregnancies, &c. After quickening, the changes in the os uteri are stated to be not sufficiently marked to denote the date of pregnancy. The author's remarks on the abdominal enlargement, enlargement of the breasts, &c., do not require particular mention.

*Functional Deviations.*—The most important of these is the change in the menstrual secretion. As a general rule this function is well known to be suppressed; but numerous instances are recorded in which menstruation, or something very like it, has presented throughout the entire period of gestation. Mr. Whitehead has collected several instances of the kind, but distinctly denies that the discharge is ever truly catamenial, and asserts that "menstruation during pregnancy is for the most part, if not always, associated with an abnormal condition, generally ulcerative disease of the uterus, requiring at all times active remedial interference." It is further stated that this hemorrhage, as it does not proceed from the uterus, need not interfere with gestation if duly attended to. The same explanation is given of certain cases of supposed menstruation during lactation. Whether these opinions will bear investigation it is for obstetricians to decide.

The author next mentions the state of the mucous membranes during pregnancy, and speaks of the increased temperature of the vagina; but makes no allusion to the violet tint which, as will be seen below, is regarded by some French authors as characteristic. The state of the urine during pregnancy is also touched upon.†

\* Op. cit., p. 422.

† Op. cit., p. 182, et seq.



14. *Signs derived from Inspection of the Vulva.*—M. Huguier considers the red-dish-violet colour of the vulva as diagnostic of pregnancy. This colour is not very apparent upon the internal surface of the labia, but becomes more so on the inner surface of the nymphæ near the meatus, and on the tubercle anterior to the vagina. It is first seen at the end of the second month. M. Huguier states that he has never seen this appearance in women who did not prove to be pregnant. He states also that the piliferous follicles become hypertrophied, and secrete a gluey adhesive fluid.\*

15. *Obstetric Auscultation.*—We have two communications to notice on this branch of auscultatory science: a new work by M. Depaul,† which is a complete treatise on the subject, and an essay by Dr. M'Clintock, which refers more particularly to its applicability as an auxiliary in the management of labour.‡ Mr. Whitehead also devotes a section to its consideration as a means of detecting pregnancy.§

M. Depaul's work of 400 pages is divided into two parts: the first of which we shall pass over, as it is confined to the history of obstetric auscultation. Of the second part, which is the more important, it will be impossible to give a full account, in the short space allowed in this Report, and we shall therefore be obliged to give only some of the author's general conclusions upon the various points, together with such of his comments as may appear desirable.

The two signs, or sounds, which he notices are those familiarly known as the placental souffle, and the beat of the fœtal heart.

For a reason which will presently appear, M. Depaul thinks that the term *uterine souffle* could be substituted for placental. It is stated to be unlike all other blowing sounds, and to be perceptible in some cases as early as the tenth week. It is produced, according to him, in the *arteries* of the uterus. It is not an infallible sign of pregnancy, and its importance is made by its connection with other signs. Mr. Whitehead, on the other hand, states that it is an unerring sign of pregnancy. A sound in all respects similar may be produced by enlargement of the uterus from other causes. It is not modified by the death of the fœtus, and is, therefore, no assistance in determining its vitality. It is not indicative of the precise spot at which the placenta is attached; nor is the presence of more than one souffle a sign of a double pregnancy.

With respect to the situation at which this sound may be most readily heard, M. Depaul states that, in 295 cases, where gestation had exceeded the fifth month, it was heard on each side in 180: on one side only in 27; at the fundus alone in 43; in 18 it was everywhere audible, and in 12 in three situations, the fundus, and just above Poupart's ligament, on each side.

The other auscultatory sign, the sound of the fœtal heart, is one of still more importance, and receives a corresponding share of attention. The author recapitulates the result of his researches on the subject under numerous aphorisms, the principal of which we give below:—

The sound resembles the ticking of a watch, and is generally unaccompanied by any other sound. Sometimes, however, it is associated with a blowing murmur, or rubbing sound.

The sound may be heard (in favourable cases) at the end of the twelfth week.

The situation at which the sound is heard with the most facility varies, according to the date of pregnancy and the position of the child.

The frequency of the fœtal pulsations is nearly the same at all stages of gestation, and are but little influenced by the uterine contractions, or by moral emotions of the mother.

In the author's opinion, it is impossible to confound the sound of the fœtal heart with any other sound which is heard in the abdomen.

Its presence is an infallible sign of the presence and vitality of a child.

Two distinct double pulsations, not isochronous, warrant the supposition of a twin pregnancy.

If three such sounds were present, it might be possible to recognise triplets.

\* Gazette des Hôpitaux, No. 74.

† Traité Théorique et Pratique d'Auscultation Obstétricale, Paris, 1847.

‡ Dublin Quart. Journ. of Med. Science, Aug. 1847.

§ Op. cit., p. 209.

In the majority of cases, if the pregnancy be sufficiently advanced, the position of the child may be ascertained.

The modifications which may occur in the beat of the fœtal heart should be carefully attended to, when these exceed certain limits, the life of the fœtus will be in danger.

The changes which indicate danger consist chiefly in irregularity of the pulsations, with diminution in frequency and force.

The importance of these facts will be appreciated wherever an operation has to be performed.

—We now proceed to analyze briefly the memoir by Dr. M'Clintock, the object of which, as we have before stated, is to point out the manner and extent to which auscultation can be made available in the management of the process of parturition.

The author, after a short historical notice of obstetric auscultation, states that in the commencement of labour the pulsations of the fœtal heart are generally heard in one or other iliac fossæ, commonly in the left; the point at which they are heard with the greatest intensity indicates the part of the uterus with which the child's thorax is most closely in contact.

With regard to the part of the child which is in closest approximation to the uterus in the different presentations, the author observes that in ordinary vertex presentations, it is the back of the thorax, owing to the position which the child's body habitually holds in these cases—the legs being doubled up on the abdomen, the chin depressed on the chest, and the whole body bent forwards, so as to present a considerable convexity on its posterior part. Hence it follows, he remarks, that, in the first and second positions of the head (where the back of the child is anterior), we may expect to find the fœtal pulsation most audible in the left and right inguinal regions respectively, whilst in the third and fourth positions it should be more posterior towards the woman's loins. Experience has convinced him that this is pretty uniformly correct; and the concurrent testimony of Kennedy, Nægele, Anderson, and others, tends to confirm it. The rotation of the head, even, from the third position into the second, and the fourth into the first, may be sometimes traced with tolerable accuracy, by making successive stethoscopic examinations, and noting the changes in the situation of the fœtal heart. In facial presentations, owing to the attitude of the child, the *front* of the chest is the part which lies most contiguous to the uterine parietes, and the situation of the fœtal pulsations have been found to agree therewith, being audible anteriorly (in the iliac region) when the head holds the mento-pubic position, and rather posteriorly when it is in the opposite, or mento-sacral position.

As regards breech presentations, Dr. M'Clintock has very frequently verified the observation of Dr. Collins, that, in such, the fœtal heart is most distinctly heard near the umbilicus of the mother. The same remark equally applies to footling cases. He has practised auscultation in only two or three instances of arm presentation, and in these the fœtal pulsations were not audible so high up as the umbilicus, though somewhat above the natural situation.

The author agrees as to the possibility of diagnosing twins, but remarks that it is not sufficient to hear two fœtal pulsations at separate parts of the abdomen, but there must be a *want of synchronism in the beats, as heard at the two points*. The reason for this is, that sometimes the heart of a single fœtus is heard at two different parts of the abdomen, separated by an interval in which no pulsation is audible.

The next point which the author enters upon is one of much importance in the value of auscultation, as affording evidence of the child's condition during parturition. This inquiry refers to the character of the fœtal sounds as to strength, regularity, &c. At the outset of the inquiry an important practical question presents itself, viz., does the child usually perish in a tedious labour, before the full development of those bad symptoms which indicate the necessity for immediate interference? In reply to this, the author coincides, with Dr. Collins, that where a patient has been properly managed from the commencement of her labour, the death of the child anticipates the symptoms in a laborious labour, which necessitates the operation of craniotomy. The bearing of this question upon practice is obvious.

To the complementary question, "Under what circumstances can the absence of the fetal pulsations be taken as evidence of the death of the child?" the author remarks, that "if, in the course of a tedious labour, the fetal pulsations, from having been distinct and normal become gradually rapid and weak; and that, as labour advances, they undergo a further change of character, so as to be with difficulty recognised at all; and if, finally, at a later period, after a careful examination, the auscultation fail to detect them, then we may rest assured that they have ceased, and that consequently the death of the *fœtus* has taken place." It is essential, the author further remarks, to the diagnosis that the chain of evidence should be complete, and that a series of examinations be made, for the finding the sounds absent on a single examination is no evidence at all. In this we entirely agree, for we have known in the latter months of pregnancy that the fetal sounds, which have been inaudible, apparently from some sympathetic disturbance connected with congestion of the maternal circulation, have resumed their distinctness after the practice of a moderate venesection.

The author next turns to a class of cases where auscultation has been advantageously employed with a view of saving the life of the *fœtus*, by pointing out the exact time when delivery should be effected by means of the forceps or vectis. The cases to which the author alludes are those in which the ergot of rye has been given. In reference to the effects of this medicine upon the fetal heart, he adopts the opinions, which we cannot help thinking are somewhat exaggerated, of Dr. Beatty (*Dub. Journ.*, vol. 22) and Dr. Hardy (*Abstract*, Vol. I. p. 184). However, it is unquestionable that the heart's action may, in some untoward instances, be reduced by it, and it is in these cases that the author employs the stethoscope as the exponent of the degree of danger to the child.

Another class of cases in which this practice may be available is rupture of the uterus, and in labours complicated with convulsions. The author, after some observations on the value of the persistence of the placental bruit as a sign of fetal life, in which he agrees with Depaul (*vide supra*, p. 251), terminates his paper with the subjoined recapitulation:

1st. Where the *fœtus* is alive, the sounds of the heart may always be detected at some period of the labour by any one of ordinary proficiency in obstetric auscultation.

2d. The precise region of the abdomen in which the fetal heart is heard, affords auxiliary evidence of the position of the child in utero, but can never alone be relied upon for determining this point, or supersede the necessity of a vaginal examination.

3d. In presentations of the lower extremities, whether it be breech, foot, or knee, the fetal heart is usually heard most distinctly near the umbilicus of the mother.

4th. Conclusive auricular evidence of the existence of twins is only to be drawn from the inequality in the number of beats of the two fetal hearts, and not merely from any difference as to their respective positions.

5th. If, in the course of a tedious or difficult labour, the fetal cardiac sounds, from having been distinct and clear, gradually become feeble and obscure, and ultimately inaudible, under these circumstances their absence is entitled to rank as positive evidence of the child's death; but without previous successive examinations this conclusion would be destitute of any positive character.

6th. In cases where ergot of rye has been given to hasten delivery, auscultation of the fetal heart is the only certain way by which we can know when the medicine is beginning to act injuriously upon the child, consequently stethoscopic indications are alone entitled to confidence for determining the exact time when the state of the *fœtus* calls for interference.

7th. In cases simulating rupture of the uterus, the persistence of the pulsations of the fetal heart is a strong proof against the occurrence of the accident, and the more advanced the period at which they are audible after the setting in of the bad symptoms, the more conclusive the evidence that rupture has not taken place; whilst, on the other hand, the sudden cessation of the fetal pulsations, when they had been distinct a short time previously, would strongly corroborate other evidence of laceration of the uterus.

8th. After an attack of puerperal convulsions in the seventh or eighth month of



pregnancy, when labour has not immediately supervened, the prognosis should be much regulated by the state of the fœtus, for if it be proved that the child is alive, we may venture to hope that gestation will go on undisturbed, unless the convulsions recur, whereas, if the child has been destroyed, its expulsion will take place, most probably in from ten to fourteen days.

9th. No certain conclusions regarding the state of the fœtus can be drawn from the character of the placental soufflet.

10th. In cases of flooding before delivery, observation of the placental bruit may supply useful diagnostic information, by pointing out the part of the uterus to which the afterbirth is attached, and thereby showing whether the hemorrhage is accidental or unavoidable.

11th. Auscultation of the heart in stillborn children more accurately acquaints us with the state of the child's vital powers, than any other source of information.

16. *Pregnancy complicated with Tumour.*—An interesting example of this complication is related by Mr. Dashwood, of Beccles. The patient, æt. 29, began, in January 1846, to complain of constant pain in the left iliac region. On examination, a firm resisting tumour, the size of an orange, was discovered, unequal on its surface, and movable. The patient had not ceased to menstruate until the last period. Mr. Dashwood did not consider her pregnant, the question having arisen, and for confirmation of his opinion obtained the assistance of Mr. Page Scott, of Norwich, who coincided with him as to the non-existence of pregnancy. From the time the tumour continued to increase, the os uteri ascended out of the reach of the finger, and an incompressible and immovable mass gradually descended, pushing before it the posterior wall of the uterus, and encroaching so much on the outlet of the pelvis, that only a finger could be insinuated between it and the pubis. While making a second examination in the following June, Mr. Scott distinctly ascertained the movements of a fœtus, and the case assumed from this fact so formidable a character, that his assistance, as well as that of Mr. Crowfoot, of Beccles, was requested at the labour. This event commenced in September, and the os uteri, which was high up under the pubis, was felt to be dilated, and the presentation normal. Fortunately, the tumour which occupied the outlet was shortly felt to recede, and a stillborn child was eventually born with the assistance of the lever.

In the discussion which followed the narration of this case before the Edinburgh Obstetrical Society, Dr. Simpson expressed his belief that the tumour was of a fibrous character, and related several similar cases.\*

For the general principles of treatment in these untoward cases, see "Abstract," Vol. III. p. 225.

17. *Extra-uterine Fœtation.*—A case of Fallopian pregnancy, which proved by rupture of the tube at the end of three months, is recorded by Mr. Cobbold. It does not appear that any tumour was discovered during life, or any suspicion of the nature of the case entertained. The woman sank under symptoms of collapse from internal hemorrhage.

18. *Disorders of the Nervous System associated with Pregnancy.*—These disorders are the subject of an essay, by Dr. Lever, which consists, for the most part, of a simple narration of cases. The first disease which he notices as an occasional accompaniment of pregnancy is chorea, of which he gives five examples. In the first case, the irregular movements commenced in the second month of gestation, and, resisting all the approved methods of cure, subsided spontaneously a month after delivery. The second case was similar to the above. In the third, the chorea was cured before delivery by the sulphate of zinc in increasing doses. The fourth case was relieved by the same treatment, and subsided after delivery. The result of the fifth is not given.

The next nervous affection considered, is paralysis in connection with pregnancy, of which four instances are adduced. The first is peculiarly interesting, paralysis declaring itself with every pregnancy, and subsiding on delivery, again recurring with less intensity during lactation. The other forms of nervous affections are deafness, partial amaurosis, and aberration of mind; all of which are

\* Month. Journ. of the Med. Sciences, Aug. 1847.

† Prov. Med. and Surg. Journal, Sept. 22, 1847.

illustrated by appropriate cases, and all tend to establish the opinion that the morbid symptoms are functional only, and that though they may be relieved by medical treatment, the natural cure consists in the removal of the exciting cause by delivery.\*

—In connection with the same subject, we may notice that Dr. Simpson narrated cases of nervous disturbance associated with albuminuria in pregnancy and the puerperal state. His conclusions are to the following effect:—

1st. Albuminuria, when present during the last periods of pregnancy and labour, denotes a marked tendency to puerperal convulsions.

2d. Albuminuria in the pregnant and puerperal state sometimes gives rise to other and more anomalous derangements of the nervous system, without proceeding to convulsions; Dr. Simpson had chiefly noticed local paralysis, neuralgia, amaurosis, deafness, hemiplegia and paraplegia.

3d. Œdema of the face and hands, going on occasionally to general anasarca, is one of the most frequent accompaniments of albuminuria in the pregnant female.

4th. The presence of œdema, or of the nervous symptoms, should always make us suspect albuminuria, and if this suspicion is verified by examination, we should diligently guard, by antiphlogistic means, against the supervention of convulsions.

5th. Albuminuria and its effects are more common in first than in later labours, and generally then disappear after delivery.

6th. Albuminuria with convulsions, occurring in any labour later than the first, generally results from fixed granular disease of the kidney, and does not disappear after delivery.

7th. In cases of severe puerperal convulsions, &c., from albuminuria, the renal secretion is generally greatly diminished, and Dr. Simpson has found active diuretics of use after or with venesection, antimony, &c.†

—M. Devilliers has likewise communicated the results of some investigations on the same subject, the joint labours of himself and M. Regnault. These authors do not find albuminuria to be a frequent complication of pregnancy; but notice that eclampsia and œdema are the most frequent indications of its presence. The communication does not in any way advance our knowledge of the association, and, indeed, the acquaintance of continental pathologists with it is comparatively recent, and derived mostly from the prior notices of Bright, Lever, &c.‡

19. *Abortion, Statistics of.*—The subject of abortion is considered by Mr. Whitehead with great detail, and occupies a large portion of his volume.§ In his statistical inquiries, which have been very extensive, he has elicited some facts for which, we conceive, the profession are little prepared. For instance, it appears that thirty-seven per cent. of mothers miscarry before the age of thirty years. It is popularly believed that first pregnancies more frequently terminate prematurely than those which come after. This does not accord with Mr. Whitehead's observations; on the contrary, he finds that the third and fourth, and the last, or that nearest the critical period, are the most unsuccessful.

The period of gestation at which abortion most frequently occurs is ascertained, by the analysis of 602 cases, to be the third month, the number for that being 275. The total number which happened within the first four months was 357, or considerably more than half.

20. *Causes of Abortion.*—Passing by Mr. Whitehead's remarks as to the causes of abortion most commonly recognised, we shall give the author's individual experience. In the intimate association, which exists between uterine disease and abortion, the author accords with Drs. H. Bennet, Evory Kennedy, Costilhes, &c. He was early in his investigations struck with the constancy with which leucorrhœal affections preceded abortion, and was led to examine into the state of the uterus with reference to this discharge. In so doing he almost invariably found disease of the cervix, in this again confirming the accuracy of Dr. Bennet's assertions. The great share which disease of this region has in producing abortion appears by a reference to Mr. Whitehead's cases, in which it appears that in 275

\* Guy's Hosp. Reports, vol. v., 1847, pp. 1-25.

† Revue Médicale, 1847.

‡ Month. Journ., Oct. 1847.

§ Op. cit., pp. 239-398.

out of 378 this cause was clearly assignable. The other causes were accidental injuries, placenta prævia, constipation, retroversion of the uterus.

21. *Congestion of the Uterine System as a Cause of Abortion.*—Plethora of the uterine vessels not unfrequently exists during pregnancy, and in Mr. Whitehead's cases was the cause of abortion once of twenty-five times. The symptoms are painful distension of the abdomen, sense of weight and bearing down, intermittent pains in the loins, and distension of the pudic, hemorrhoidal, and pelvic veins. On examination, the cervix uteri is found tumid and varicose. Of this condition the author relates cases in which the miscarriage was warded off by blood-letting, general or local, and the exhibition of sedatives.

22. *Uterine Disease as a Cause of Abortion.*—The two hundred and seventy-five females who aborted in consequence of uterine disease were, with few exceptions, examined with the speculum, either before or soon after the event, and exhibited the following catalogue of lesions: 1, inflammation and superficial erosion of the os and cervix; 2, varicose ulceration of labia of the os tincæ; 3, œdema of the cellular tissue of the cervix; 4, fissured ulceration of one or both commissures; 5, induration of the cervix, with or without abrasion; 6, endo-uteritis; 7, follicular ulceration; 8, gonorrhœal inflammation; 9, syphilitic disease; 10, prolapsus uteri. We shall briefly mention the author's remarks upon each of these divisions.

1st. *Inflammation and Superficial Erosion of the Os and Cervix.*—This lesion is described as the most common of those which produce abortion, having occurred in 25 per cent. of the cases in which this accident was attributed to uterine disease. In the majority of these instances the miscarriage occurred between the middle of the sixth and the middle of the ninth month. The simple erosion may implicate one or both labia, and extend or not within the neck. The ulcer presents a velvety surface, with elevated margins, and with the speculum is seen to be of a bright red colour, and covered with muco-pus. The symptoms are yellowish vaginal discharge, which is often alkaline, irritative fever, lassitude, sacral and pelvic pains, &c. The author treats this form of ulcer by leeches and sedatives, followed by the application of solid lunar caustic. We may state *en passant* that he regards the discharge from these ulcerations as capable of giving rise to blennorrhagia by inoculation.

2d. *Varicose Ulcer.*—The symptoms which indicate the presence of this ulcer are the same as those previously mentioned, but in an aggravated degree. The discharge is at first mucous, afterwards becomes sanious or purulent, frequently mixed with blood. The ulcer is uneven, with numerous vessels ramifying around its circumference; it usually occupies only one labium. The treatment advised is early bleeding from the arm, lunar caustic, and the application of pledgets of lint dipped in tincture of matico, if there is much hemorrhage. It is the presence of this ulcer which, in the author's opinion, gives rise to the discharges of blood during pregnancy, which are erroneously regarded as menstrual.

3. *Edema of the Cervix.*—The third morbid conditions of the uterus which the author mentions as predisposing to abortion is a dropsical state, associated with a low inflammatory state of the cervix. It is said by him to prevail in about one in twenty cases. The treatment is strictly constitutional, unless an abrasion co-exists, when local measures above mentioned are adopted.

4th. *Fissured Ulcer.*—This is described as a more unmanageable form, occurring in about 4 per cent. of abortions from uterine disease. The fissures are single or more in number, and divide the labia to a greater or less depth. The symptoms are purulent discharge, mixed frequently with blood, severe aching pains in the loins, irritable bladder, pain in the lower part of the abdomen, &c. The treatment consists in alteratives, leeching, and lunar caustic to the part.

5th. *Induration of the Cervix* is the consequence of chronic inflammation. The symptoms are painful sense of constriction in the pelvis, pain in the vaginal regions, irritability of the bladder and rectum.

6th. *Endo-uteritis* is stated by the author to be a common cause of abortion during the earlier months of gestation. The symptoms are distension of the hypogastrium, deep-seated aching behind the pubis, irritable bladder, vaginal discharge, the cervix is hard, the labia tense and glistening, and a ring of vivid redness surrounds the os uteri. The author's treatment of this affection consists in antiphlo-



gistic and alterative remedies, with the injection of a solution of nitrate of silver into the uterus.

7th. *Follicular ulceration* consists in engorgement and erosion of the nabothian follicles.

8th *Gonorrhœal Inflammation*.—The author, in speaking of this division, advances the opinion that gonorrhœa is more generally an affection of the uterus than of the vagina. Though this opinion is not the general one, it is not confined to the author: for, if we are not mistaken, Ricord entertains much the same notion, and regards abrasion of the os as the only positive indication of virulent gonorrhœa. Mr. Whitehead further believes that neglected gonorrhœa in the female is a fertile source of chronic endo-uteritis, in which way we presume it acts as a cause of abortion, and that it is readily cured by the application of the solid caustic to the os and cervix. The ordinary method of injections he looks upon as useless.

9th. *Syphilitic Disease*.—The influence of the syphilitic taint in producing or predisposing to abortion has long been acknowledged, whether that taint exist in the mother or in the father: but the localization of the disease upon the uterus itself has not attracted much attention. Primary ulceration is confessedly rare, and is admitted to be such by the author as well as by Dr Bennet and the French writers upon the subject; but the secondary effects, if we are to believe our author, are far from being uncommon.

The local pathognomonic signs of uterine syphilis are stated to be—1, endocervicitis,\* or inflammation of the interior of the cervix, with excoriation of the orificium uteri; 2, a mottled or patchy appearance of the cervix; 3, an aphthous condition of the same parts; 4, venereal warts. The treatment of this state need not be mentioned in detail, being that in ordinary use. We may, however, state that the author has derived great advantage from a decoction of the *rumex hydro-lapathum* as an anti-syphilitic, it being, in his opinion, superior to sarsaparilla.

10th. *Prolapsus uteri* is the last condition mentioned as predisposing to abortion. The most interesting portion of the author's remarks consists in his treatment. He objects forcibly, as we believe all practitioners of experience do, to the use of pessaries, and trusts to the cure of the ulcerations and engorgement, which he maintains to be the cause of the prolapse, aided by the insertions of astringent tents.†

In giving this brief analysis of Mr. Whitehead's views on the etiology and treatment of the predisposition to abortion, it is but fair to state that we cannot give an adequate view of their value without the aid of the numerous cases by which they are illustrated. For these we are compelled to refer the reader to the original work, the possession of which we are assured he will never have reason to repent.

23. *Prevention of Abortion*.—The prevention of abortion is treated of by Dr. Griffin as one of his medical problems; in connection with which he publishes some very interesting cases, in which he was enabled to break through the habit of miscarriage, by treating the patient as he would do for other diseases of periodical recurrence. The medicines which were most successful in his hands were zinc and valerian. In his first case the treatment was quite successful. The disposition to premature expulsion being controlled effectually. It is to be stated that Dr. Griffin does not put this forward as a certain method of prevention, but rather as a suggestion worthy of attention.‡

With the same object M. Laferla exhibits *assafoetida*; and also adduces the evidences of numerous cases.§

24. *Premature Labour*.—Dr. Segondi introduced the question, "Whether, in the case of several successive deliveries of a dead fœtus in the course of the eighth month, it is not admissible in a future pregnancy to induce premature delivery at the seventh month?" as a subject for discussion at the Scientific Congress held at Genoa, in Sept. 1846. In support of his proposition, he narrated two cases; one that of a lady who had produced eleven dead children at the eighth month, the

\* Another inharmonious compound. It should have been intro-cervicitis, or endo-auchementis, if the Greek be preferred.

† Op. cit., pp. 239-398.

‡ Dublin Quart. Journal, May 1847.

§ Encyclograph. Med., May 1847.

other that of a lady who had miscarried in this way five times. In these he considered, as every other method had been tried in vain, the means he proposed were justifiable. The discussion which ensued was of an interesting character, and elicited valuable opinions from some of the leading Italian obstetricians. Professor Centophanti remarked that it was necessary to ascertain whether the death of the child at the period mentioned was due to a defect in the mother or in its own developmental powers, and likewise whether it really died at the eighth month, or had not perished anterior to this, and been retained to the time of its expulsion. The latter case would negative the propriety of the operation, as far as regards the saving of the life of the child, the motive, indeed, with which it is proposed. With these restrictions, both he and Professor Vannoni agreed that, under the circumstances mentioned in the question, the induction of premature delivery was proper.\*

Upon this question the editor of the "Medico-Chirurgical Review," from which we quote, has the following pertinent remarks:—"This application of the induction of premature labour is of doubtful expediency. The question of the cause of the death of the *fetus in utero* is involved in too much obscurity to admit of positive opinions being pronounced; but it seems to us, when we bear in mind the great difficulty in preserving and rearing premature children, that one whose vital powers were so limited as not to admit of retention of life *in utero*, would have its chances of living but little, if at all, increased by inducing its hasty expulsion. Admirable as this resource is in appropriate cases, and foremost as the practitioners of this country have shown themselves in employing it, the induction of premature labour is not an operation to be extended to additional emergencies without the gravest consideration."† It appears to us that if the assertions of Dr. Bennet, Mr. Whitehead, and others, as to the dependency of abortion upon disease of the uterine neck be borne out by further observation, the prevention of abortion as regards the mother will be greatly simplified. Where the death of the *fœtus* is the immediate cause of its expulsion, and the extinction of its life arises from causes inherent in its own organization, we cannot see, as is stated in the quotation given above, that its position is bettered by premature expulsion.

25. *Tonic Spasm of the Uterus*.—The "Clinique de Montpellier" contains an article translated from the Spanish by Signor Corral y Ona, describing an affection under the term uterine tetanus, which appears to be nothing more nor less than tonic spasm of the organ, or, as it is called by Dr. Rigby, "stricture" of the uterus (see Lib. of Med., vol. vi. p. 212). The author relates two cases in which the spasm supervened upon the exhibition of ergot, and was so long continued, in spite of bleeding, warm baths, &c., that he was necessitated to have recourse to the forceps. Both women died from metritis.

26. *Uterine Inertia*.—A very remarkable case which may be referred to this condition, is reported in the last volume of "Guy's Hospital Reports," by Dr. Oldham. The case was as follows:—

The woman, æt. 41, who had miscarried several times, was engaged to be attended by Mr. Amsden, and who was sent for on the 26th of June, 1845, as she had been seized with flooding. She was put to bed, and on examination, the os uteri was found to be closed. Dr. Oldham saw her on the 30th; she was then complaining of tenderness in the abdomen, but without sickness or febrile symptoms. The abdomen had the ordinary appearance of the ninth month. On examination, the os uteri was within reach, the anterior segment round, and distended by the *fœtal* head; the os uteri readily admitted the finger, and the *fœtal* head, covered by the membranes, could be felt. The breasts had become swollen and hard, and had all the appearance of the breast three days after delivery. The *fœtal* heart could not be heard, or any movement detected, whence the death of the child was surmised. Under these circumstances, little or nothing was done, and labour was waited for.

On the 12th of July, no appearance of labour pains, but a fetid discharge, with puffs of gas came from the vagina. She is now weak, with flushed face, weak pulse, and furred tongue. The os uteri admitted two fingers, allowing the bones of a decomposing *fœtal* cranium to be felt. There had been no uterine action. Efforts were now made to empty the womb, first by ergot, which was ineffectual,

\* Annali Universali, vol. cxxi. p. 172.

† Med.-Chirug. Rev., Oct. 1847.

afterwards by dilating the cervix. Dr. Oldham, however, found that this dilatation could not be effected to any extent. Galvanism was then resorted to, both externally, and with one of the conductors applied by the vagina, but all to no purpose, the uterus remaining perfectly passive. A great quantity of decomposing matter was released from the womb, by passing a small hook through the os uteri, and injecting a stream of warm water within the cavity. On the 17th of July, the placenta was removed in a putrid state. The womb then began to shrink, and eventually the greater part of the fœtus was removed piecemeal. The abdomen daily diminished in size, and the discharge lost its fetor. During this time the patient's powers were sustained by ammonia and bark.

The subsequent progress of the case was at one time encouraging, but in September she complained of tenderness in the abdomen, with severe pain in passing water. Dr. Oldham thought that the uterine wall had ulcerated through, and that the remainder of the fœtus had escaped into the abdomen, a surmise which was verified *post-mortem*. The patient from this time rapidly sank, and died three months from the time at which labour was due.

On examination it was found that the anterior portion of the uterus had ulcerated away, and that the fœtal bones were contained in a sac formed by the intestines above, by the posterior wall of the uterus behind, and by the abdominal parietes and bladder below, and in front.

In his comments upon the above case, Dr. Oldham calls attention to its rarity, and alludes to one something similar recorded by Dr. Cheston in the fifth vol of the "*Medico-Chirurgical Transactions*," in which the fœtus escaped through the uterine walls, and was found almost perfect in a bony cyst, at the end of fifty years.

The author points out the general resemblance of the case to certain forms of extra-uterine foetation, for which it might have been mistaken, but for the certain evidence afforded by vaginal examination. He does not explain the cause of the uterine paralysis.\*

27. *Spontaneous Evolution*.—An additional instance of this unusual occurrence has been met with by Dr. Keiller. When he saw the patient, the liquor amnii had been some time discharged, and the vagina was occupied by an arm greatly swollen, the shoulder being firmly grasped by the os uteri. Dr. Keiller failed in repeated attempts to turn, and the uterine action continued excessive, in spite of the use of opium, &c. Suddenly, during a violent pain, the arm was withdrawn, and the feet and body were almost simultaneously expelled. The child was dead, but the mother made a good recovery.†

28. *Placental Presentation*.—The period embraced in our Report has been fertile in communications upon this subject, or points connected with it. In proof of which we may mention—1. A paper by Mr. Barnes, "On Flooding before Delivery, from Adhesion of the Placenta to the Os and Cervix Uteri."‡ 2. "On the Construction of the Placenta, and the Mode of Communication between Mother and Child," by Mr. Adams.§ 3. "On the Source of Hemorrhage in Partial Separation of the Placenta," by Dr. Chowne.|| 4. On the same, by Dr. Radford.¶ 5. "On the Treatment of Uterine Hemorrhage from Placental Presentation," by Dr. Lee.\*\* 6. "Notes in Answer to Dr. Lee, regarding the General Mortality of Placental Presentations," &c., by Professor Simpson.†† 7. "On the Maternal Mortality in Placenta Prævia," by Dr. Radford. 8. "Further Observations on the Treatment of Uterine Hemorrhage from Placental Presentations," by Dr. Lee.‡‡ 9. "On Placenta Prævia," by Dr. Tyler.§§ 10. "Observations on Placenta Prævia," by Mr. Jones.|||| Such of these as are not solely occupied with personal controversy we shall proceed to notice.

29. *Source of Hemorrhage in Placental Presentation*.—There are three opinions now before the public, upon a point which we should have conceived might have been set at rest by a few carefully conducted anatomical investigations: first, that which is generally entertained, and of which Dr. Lee may be looked upon as the

\* Guy's Hosp. Rep., vol. v. p. 105.

† Lancet.

‡ Lancet, Aug. and Sept., 1847.

\*\* Ibid.

†† Lancet, Oct. 16.

|||| Prov. Med. and Surg. Journ., Oct. 6, 1847.

† Month. Jour. of Med. Science, July, 1847.

§ Med. Gaz., Aug. and Sept., 1847.

¶ Ibid., Sept. 18.

†† Ibid., Oct. 9.

§§ Dublin Quart. Journ., May, 1847.



exponent, viz., that the blood proceeds from the uterine sinuses; secondly, that promulgated by Dr. Simpson (see Abstract, Vol. III. p. 121), that it proceeds mainly from the detached portion of the placenta; and, thirdly, Dr. Radford's opinion, that it proceeds from both these sources combined. Mr. Barnes appears to be of the latter opinion. Mr. Adams, holding the theory that the placenta "is a portion of the fetal appendages, having no connection with the maternal parts but by imbibition," as a matter of course regards the uterine sinuses as the sole source of those losses of blood by which the mother so frequently perishes. Dr. Chowne, whose essay is an elaborate production, holds the same opinion. That his view is the correct one he assumes for various reasons; among others, because in post-partum hemorrhage, after the removal of the placenta, there can be no other source; because dangerously copious hemorrhages may occur in the unimpregnated state of the uterus, and in the case of uterine hydatids, where there is no placenta; and because the blood has, in the case of inverted uterus, been seen to pour from the uterine vessels, when the placenta was peeled off previous to the attempt to reduce the organ.

—Dr. Radford's paper is a criticism of the one published by Dr. Chowne, taking the same divisions of the subject, and criticising them seriatim. Dr. Radford adheres to the opinion previously expressed by him, that, although the great bulk of the hemorrhage proceeds from the uterus, a very considerable quantity also flows from the placenta.

30. *Maternal Mortality from Placental Presentation.*—The question of the relative mortality from placental presentation, under the old operation of turning, and that of evulsion of the placenta, is apparently as far as ever from being satisfactorily solved, and has recently given rise to a discussion between Drs. Simpson and Lee, not of the most amicable kind, as well as to certain anonymous attacks upon the former writer, which, like most writings to which the author has not the courage to append his name, do not redound to the credit either of the writer or the profession to which he belongs.

Of the papers by Drs. Lee and Simpson we do not propose to give any detail, simply stating that each writer respectively charges the other with inaccuracy, and that they are written in a temper too strictly personal to allow of any satisfactory analysis of their contents.

31. *Mortality to Mother and Child under Evulsion of the Placenta.*—Dr. Radford gives two tables of all the cases, as far as he has been able to ascertain them, in which the placenta has been extracted before the child. The first includes cases in which the operation was intentionally performed; the second contains cases in which the placenta has been ignorantly separated and left, and afterwards extracted with the exception of three, in which the placenta was unintentionally separated in the endeavour to turn.

The first table includes forty-two cases, of which twenty-eight are complete, and five partial placenta prævia; of nine there is no account given; in all, the placenta was detached by the hand; in eighteen, turning was performed; in six, it is presumed to have been so; in one, the child was extracted by the presenting leg; sixteen were terminated by the natural efforts; one by the vectis, one by the perforator and crotchet. In thirty-three, the flooding was profuse before the operation; in two, presumed to be so; in six, no statement is made on this point; in twenty, it ceased after the placenta was detached; in eight, it was presumed to have ceased; in six, there is no account given. Thirty-nine mothers were saved; three were lost, one in a few hours; four children were saved; twenty were lost; five died some time before labour; in eighteen no statement was made.

Table II. contains fourteen cases; in ten, the placenta was ignorantly separated and extracted by the hand; in one, a portion was cut off, the remainder afterwards extracted; in three, the placenta was unintentionally separated in turning; two were terminated by the natural efforts; ten by turning; two by forceps. In twelve, the previous hemorrhage had been great; in one, not profuse; in one, not stated; in seven, it ceased after the separation of the placenta; in three, it considerably abated; in two, no account given; in one, a good deal of blood was lost. Eleven mothers lived; two died; three children were saved, nine lost; of two no account given.\*

\* Lancet, Oct. 16.

32. *Treatment of Placenta Prævia*.—Among the writers above alluded to, two opinions exist as to the propriety of extracting the placenta. Dr. Lee strenuously opposes it under any circumstances. Dr. Simpson and Dr. Radford are, as is well known, advocates for the plan under certain conditions. Mr. Barnes (op. cit.) considers that Dr. Simpson has the honour of having “effected a valuable improvement in obstetric practice, by having exposed the dangers of turning, and by comparing the results of this practice with the favourable results which have followed the complete expulsion or extraction of the placenta.” On the other hand, Dr. Tyler\* states, “that until stronger evidence is brought forward in corroboration of his (Dr. Simpson’s) views, I would rather persevere in the old line of practice in this emergency, than adopt a plan so much opposed to our present state of anatomical knowledge;” and Mr. Jones† is also adverse to it, but clearly misunderstands Dr. Simpson, in believing that he advises the plan as a general rule instead of turning.

33. *The Plug*.—Mr. Barnes, from having observed that, in favourable cases, the detached portion of the placenta becomes plugged up by coagula, draws from the fact a conclusion in favour of the plug in the early stage of unavoidable hemorrhage. “Supposing,” he observes, “you are called to a case of flooding from partial placental presentation, where, although the hemorrhage has been abundant, still the patient’s health is good; the os uteri is scarcely at all dilated; it is rigid. In such a case, in order to effect either turning or total separation of the placenta, the hand must be forced through the os uteri at the risk of laceration, and the other dangers attending those formidable operations. But if, by plugging the vagina, you promote the blocking up of the bleeding orifices, by favouring the coagulation of the blood, you may safely reach the period when the os uteri shall be fully dilated, and when that portion of the placenta which had been adherent to the cervix has been wholly detached, and further hemorrhage precluded by the sealing up of the detached placental surface. The remainder of the placenta, though still adherent, as it expands and contracts with the expansion and contraction of the uterus, will not bleed. If by following this practice you can safely bring your patient to the termination of the first stage of labour, viz. the complete dilatation of the os uteri, the case is resolved into one of natural labour, and, unless any other complication arises, may be treated in the usual manner.”

Dr. Tyler (loc. cit.) also speaks of the great advantage to be derived from the use of the plug, when the soft parts are rigid and undilated, as a means of saving the profuse loss of blood to the patient. He is aware that many object to its use in unavoidable hemorrhage at the full time, from the dread of internal hemorrhage; but he thinks the fear groundless in most cases, and the danger, when it does threaten, may be avoided by watchfulness on the part of the attendant. He prefers sponge dipped in vinegar and water to other material.

34. *Turning*.—In his paper on placenta prævia above mentioned, Mr. Jones has the following observations on the operation of turning: He remarks that the usual causes of failure in performing the operation of turning are—1st, waiting too long for the dilatation of the os uteri; 2d, too great haste in performing the operation.

He remarks that, however unanimous the profession has hitherto been in considering turning the right practice in placenta prævia, teachers of obstetrics have differed as to the proper time for performing the operation.

The following directions are given by professors: Dr. Hamilton says, “If possible, delivery should never be attempted till the os uteri be dilated, and the membranes begin to protrude.” Dr. Burns says, “Whenever we find the os uteri softer, and in any degree more open than its usual state, and it admits the finger to be introduced easily within it, we may deliver safely, and if the hemorrhage be continuing, ought not to delay.” Dr. Merriman observes, “It is necessary that there be a certain degree of softness and dilatability in the uterus; but the dilatability is not always to be judged of by the actual dilatation of the part, for sometimes in hemorrhage the os uteri will be very capable of being dilated by art, though it hardly seems sufficiently open to admit a single finger.” Dr. Lee says, “It is seldom safe to attempt delivery by turning before the os uteri is so far

\* Dublin Quart. Journ., May 1847.

† Prov. Med. and Surg. Journal, Oct. 6.



dilated that you can easily introduce the points of the four fingers and thumb within it, however soft and relaxed it may be. Until dilatation has commenced and proceeded so far, I am convinced there are very few cases in which the operation will be required or completed without the risk of inflicting some injury on the os uteri."

That such discrepancy of opinion should exist amongst the teachers of midwifery on a subject of so much importance, Mr. Jones thinks must tend to produce in the practitioner indecision and delay, at a time when firmness, promptitude and decision can alone give security to his patient.

As the hemorrhage usually occurs between the sixth and eighth month of pregnancy, and there is no probability of preserving the life of the child before the seventh month, it becomes desirable, of course, to postpone delivery till after that period; therefore if the os uteri be but slightly patent, the hemorrhage recurring, but not continuing long, delay might be justifiable, and we might rely on the plug and other usual means for restraining the hemorrhage. But as the reasons for delay refer principally to the safety of the child, and the mother's life is continually in danger until delivery be effected, he advises that if the os be soft and dilatable, although it should not admit more than a finger, turning should be adopted at once, if the hemorrhage continues unabated.

If delivery has been delayed till the energies of the system are greatly expended, the author remarks that the danger of turning becomes proportionably great: and inconsiderate haste in effecting delivery under these circumstances is not unfrequently followed by the speedy death of the mother. Her safety depends on the slow, cautious, and deliberate efforts in performing the operation of turning without reference to time, but solely with the view of supporting to the utmost the nearly exhausted energies.\*

—*General rules of treatment.*—Dr. Tyler's essay concludes with the following general rules of treatment in placenta prævia:

1st. In cases of partial placental presentation, he should avail himself of the earliest opportunity to rupture the membranes, and evacuate the uterus of all its fluid contents.

2d. In the same class of cases, after the escape of the liquor amnii, should vigorous uterine action not ensue, to encourage this desirable end by means of friction over the fundus uteri, the application of a binder, the administration of ergot of rye, or the use of galvanism, as recommended by Dr. Radford.

3d. In complete placental presentation, when the os uteri is rigid and undilated, never to attempt to extract the placenta through it in that state, but to plug the vagina carefully by means of a soft sponge, previously steeped in cold vinegar and water.

4th. As soon as the os uteri has been sufficiently dilated to admit of the introduction of the hand, to seize a foot and deliver cautiously.

5th. Should there be no doubt of the child's being dead, and the head presenting, it may be delivered by the crotchet, after lessening its head.

6th. As I attribute the entire cessation of the hemorrhage which occurred in Dr. Simpson's cases, and those of others, after the extraction of the placenta, to the fact of the uterus being thereby entirely emptied of its fluid contents, and allowing the presenting part of the child to be pressed against the bleeding orifices of the uterine vessels; that in certain cases the placenta might be pierced with a gum-elastic or silver catheter, and the liquor amnii thus allowed to escape. This operation is applicable to cases where the feet present, or where craniotomy is decided upon (in head presentations), either on account of distorted pelvis, or from the fact of the child being dead.

35. *Galvanism in Uterine Hemorrhage.*—Dr. Radford has reported the following additional instance of successful application of galvanism to the uterus in a case of accidental hemorrhage, which shows that the stimulation of the uterus may be efficiently produced *mediately* through the abdominal parietes:—†

On October 13th, 1846, he was requested to visit Mary Daniel, who was said to be much reduced by continued flooding. She was now in labour of her fourth child. Her 1st labour was quick, and the child a girl; in her second, she was still more speedily delivered of a boy; a third was also a boy, after a lingering labour.

\* Prov. Med. and Surg. Journal, Oct. 6.

† Dublin Quart. Journ., May 1847.



All these three labours were attended with excessive post-partum flooding, in which extreme syncope occurred, and were followed with great weakness, from which she was a long time before she recovered. Her present labour (the fourth) began at eleven o'clock p. m., October 12th, and regular pains continued at short intervals until half-past five the next morning. When the midwife visited her, the os uteri was nearly fully dilated, the membranes had spontaneously ruptured, and a small quantity of liquor amnii was discharged. There was a continued dribbling discharge of blood, which was accompanied at times with gushes. The pains now altogether ceased, and did not return for two or three hours, and then so slightly as to be scarcely felt by the patient.

Dr. Radford arrived with the galvanic apparatus at the patient's house at twelve o'clock at noon. She was very much exhausted, her countenance ghastly pale, her lips and tongue were also very pale, the pulse was very frequent, and so feeble as sometimes not to be felt. The os uteri was nearly fully dilated, and included a portion of the head which had passed through it; there was a dribbling, pale, sanguineous discharge; there had been no pain of consequence for a considerable time, as above reported.

Dr. Radford now applied his hand on the abdomen over the uterus, and was immediately struck with the excessive thinness of the abdominal and uterine parietes. The rotundity of the breech, and the sharp and projecting parts of the child's limbs were easily felt, and one part could be as readily traced to another as if only covered with two thin folds of cotton cloth. In fact, I could easily grasp a limb. The galvanic power used at first was slight, but gradually increased until the lever was placed at the highest point. The two hand conductors were only used, and applied externally on opposite points on the abdomen, varying from time to time their relative positions, thereby carrying the galvanic fluid through the longitudinal, transversal, and oblique diameters of the uterus. The beneficial influence of the remedy was soon apparent, and the extreme atonic state of the uterus was now gradually exchanged; its parietes became firmer, and the edges of the organ, which before were so soft as to appear to float amongst the abdominal viscera, from not being traceable, now became defined. This favourable organic condition proceeded, and the induced pains, at first grinding and slight, became powerfully expulsive, and the child (a girl) was born alive at half-past one o'clock, about an hour after we began our operation. As soon as the uterine energy was fully roused, the child was rapidly and forcibly expelled. The hand was applied over the uterus, which was found firmly contracted. The discharge of blood ceased as soon as the uterus began to contract. The placenta was expelled in about five minutes. The uterus had further firmly contracted. There was not the least hemorrhage, and the constitutional condition of the patient was much improved, and indeed much better than could reasonably have been expected.\*

36. *Operative Midwifery.*—*Incision in Cases of Rigidity of the Neck of the Uterus.*—M. Nichet regards the above operation as warranted under the following circumstances:—

1st. In puerperal convulsions, in which the extraction of the fœtus is judged to be necessary.

2d. When serious hemorrhage declares itself at the close of pregnancy, and the neck of the womb remains undilatable.

3d. In narrowing of the pelvis, when it has been ascertained by measurement that the application of the forceps will be necessary, and the cervix does not readily dilate.

4th. Finally, when the head is separated from the trunk and remains within the womb, and the rigidity of the cervix will not allow of the introduction of the hand.

[Incision of the cervix has been repeatedly advised by British obstetricians in certain cases of rigidity of that part, and more particularly of late by Drs. Lever, Oldham, and Professor Simpson; but we much doubt whether either of these physicians would consider the conditions pointed out by Nichet as indications which warrant the operation. In the second case more particularly, in which the bleeding commonly arises from implantation of the placenta upon the cervix, the danger of incising the part may be readily conceived.]†

\* Report of the Manchester Obstetric Society.

† Journ. de Méd. de Lyon.

—In performing this operation, M. Chailly Honoré recommends the use of curved scissors in preference to the knife, and advises a number of small incisions rather than three or four deeper cuts, as more serviceable in inducing dilatation, and less likely to cause serious hemorrhage. [For other notices of the same subject, the reader is referred to "Abstract," Vol. II. p. 132, and Vol. IV. p. 144.]\*

37. *Turning, a Substitute for Craniotomy*.—Dr. Simpson states that he has practised turning as an alternative for craniotomy and the long forceps, in several cases in which the head had been morbidly detained at the brim of the pelvis, from the slighter forms of disproportion between the two: and he believes it to present various advantages over embryotocia. It gives the child a chance of life; it is more safe to the mother, because it can be performed earlier in the labour, and more speedily; it enables us to adjust and extract the head of the child through the imperfect pelvic brim in the most advantageous form and direction, the head flattening laterally under the traction; the neck of the child (if it were living, or only lately dead) is so strong as to allow us to exert such a degree of traction upon the obstructed head, that the sides of the cranium might become very greatly compressed, or even indented under it, and that without necessarily destroying the child; and, lastly, he observes, it is a practice which can be followed when proper instruments are not at hand, and the avoidance of instruments is generally desirable when it is possible.†

38. *Cæsarian Operation*.—Three instances of this operation have been recorded since our last Report, all of which were fatal. In two the children were living, but died, one at the end of two, and the other at four months. The references are given below.‡

39. *The Application of Ether Inhalation in Midwifery*.—We proceed to give, with as much detail as our space will allow, the more recent experience of the effects of this agent on parturition; for the earlier instances of its successful use we refer the reader to our Report on the subject in our last Volume.

At a meeting of the Royal Scientific Association, at Göttingen, a paper was read by Professor Siebold on the applicability of ether inhalation to midwifery, of which the following is a brief analysis.

The author commences by proposing two questions. 1. Whether ether inhalation may be employed in natural labour for the purpose of preventing pain. 2. Whether it is to be restricted to operative midwifery. In discussing the first of these questions the author points out that labour pains are of two kinds, the one spontaneous, and necessarily attendant upon the process, the other extraneous, and arising from accidental causes, such as manual and instrumental interference, &c. We gather from his remarks that the former pains are not to be interfered with, or only when they are inordinately severe, but of the others, or induced pains, he observes, "a remedy which promises to relieve these must be welcomed in operative midwifery, and even if they cannot unconditionally speak in favour of ether in natural labour, yet this offers no tenable argument against its use in obstetric operations."

The experiments performed by Professor Siebold in the course of his inquiries, produced results which are mainly in accordance with those of Professors Simpson and Dubois, mentioned in our last Report. He experimented both on non-pregnant and pregnant women, and found that in the latter no injurious effect was produced upon the fetal heart. In operative midwifery, including turning and the use of the forceps, the vapour was found of the greatest service; the vagina and os uteri becoming so lax as to allow of the application of instruments with the greatest facility.§

—The "*Gazette Médicale*" also contains a lengthy paper, by M. Roux, on the obstetrical use of ether, illustrated by two cases, one of turning, the other a forceps case. We can only find room for the following conclusions:—

1st. Parturient women are brought under the influence of ether as readily as others.

2d. The puerperal state is not unfavourably affected by the etherization.

\* Bull. de Thérapeutique, &c., 1847. † Month. Journ. of Med. Science, July 1847.

‡ Neue Zeitsch. für Gebundkunde; and Case by Mr. Balfour, Month. Journ., Aug. 1847.

§ Reported in Med. Gaz., June 11, 1847.

3d. In natural labour no evil result follows the alleviation of pain by ether.

4th. In difficult labour it is incumbent upon us to exhibit ether, both for the sake of the mother and the child.

5th. The uterus and abdominal muscles continue to contract during ethereal insensibility. In the cases in which their contraction have ceased, they have done so prior to the exhibition of ether.

6th. The infant is unaffected.

7th. The consequences of labour, such as the secretion of milk, &c., are not influenced.

8th. In very severe labour, as after surgical operation, there has appeared to be less inflammatory reaction, and recovery has been more rapid.\*

—The individual cases of labour in which ether has been successfully used have been so numerous that it is impossible to do more than refer to a few of them in a very cursory manner.

Dr. Prothero Smith has etherized in two cases of placenta prævia, in a case of turning, and in a natural case.† A case of turning has been recorded by Mr. Gordon,‡ and another by Mr. Pickess.§ In America, cases of forceps and craniotomy have been reported by Dr. Channing.|| These, with numerous other cases which need not be particularized, appear still further to warrant the opinion we formerly gave of the merits or at least of the innocuity of the agent in midwifery practice.

40. *Puerperal State—Puerperal Fever.*—Two cases of this disease are mentioned by Mr. Clark, of Colchester, which afford additional evidence of the facts we have been anxious to impress upon the minds of our readers, viz. its erysipelatous nature, and its communicability. The remarks of Mr. Clark upon the cases are worthy of the importance of the subject. He enlarges more particularly upon the importance of acknowledging several forms of this disease, and carefully distinguishing this, the contagious and fatal form, from those which are truly inflammatory. He also points out the inefficiency of all treatment, and the apparent origin of the cases in question from a case of phlegmonous erysipelas which he was attending at the time he was called to the first patient.¶

41. *Puerperal Mania.*—Mr. Salter narrates the case of a lady in whom it was necessary to induce premature labour on three different occasions, for aberration of mind during gestation.\*\*

42. *Vesico-vaginal Fistula.*—Professor Pancoast, of the Jefferson Medical College, has devised a new operation for this distressing accident, which consists in attaching the two sides of the abnormal opening firmly together, on the principle of the tongue and groove, so as to get four raw surfaces into contact, and thus increases the chances of union by first intention. The operation is thus conducted:—

Having exposed the orifice by a Charrière's speculum, from which the sliding blade is removed, the first object is to split up the posterior margin of the fistula to the depth of half an inch, with a sharp-pointed bistoury; the edges of the other lip are then pared off, so as to bring it into a wedge shape, first reverting it with a blunt hook, and trimming off the vesical mucous membrane with the curved scissors, and then detaching the vaginal mucous membrane in like manner, to the breadth of three quarters of an inch, along the whole extent of the lip. This is a difficult but important part of the process. The next object is to insert the raw wedge or tongue into the groove of the opposite lip of the fistula, and to retain them in apposition. This is accomplished by a peculiar suture, which the operator calls the "plastic." The threads are passed with short, sharply-curved needles; a fine catheter is then passed, and cold applied to the vulva to moderate reaction. Subsequently sulphate-of-zinc injections are used.††

—A case is related by Professor Emmert, of Berne, in which he succeeded in inducing union of the edges of the fistula by touching them with pure creasote.‡‡

\* Gazette Méd., Oct. 2 and 9, 1847.

† Lancet, July 31, 1847.

‡ Ibid., July 17.

§ Prov. Med. and Surg. Journal, Sept. 23.

|| Boston Med. and Surg. Journal.

¶ Med. Gaz., Aug. 20, 1847.

\*\* Amer. Journ. of Med. Science, and Dublin Med. Press, Oct. 10.

†† Philadelph. Med. Examiner, May 1847.

‡‡ Journ. für Chir. und Augen-Heilkunde, 1847.



43. *Midwifery Statistics*—In addition to the statistical records given in a former Volume, we record the following:—

—*Statistics of the Wursburg Hospital.*—Total number of labours, 637; 651 children born; 602 living, 49 dead; twins, 31 times. The presentations were—

Head	.	.	.	.	.	.	613
Pelvis	.	.	.	.	.	.	18
Face	.	.	.	.	.	.	10
Cross	.	.	.	.	.	.	3
Unknown	.	.	.	.	.	.	7
							651

—*Statistics by Dr. Bliss.*—These statistics embrace 820 cases of delivery; of these 815 were born in the following months:

January	.	.	52	July	.	.	65
February	.	.	63	August	.	.	81
March	.	.	74	September	.	.	75
April	.	.	57	October	.	.	80
May	.	.	62	November	.	.	72
June	.	.	71	December	.	.	63

The sex of 797 children has been noted. Of these 395 were males, 402 females.

Of 771 deliveries, the presentations were as follows:

Natural	.	.	.	.	.	738
Breech	.	.	.	.	.	15
Funis	.	.	.	.	.	1
Foot	.	.	.	.	.	8
Face	.	.	.	.	.	8
Arm and abdomen	.	.	.	.	.	1

Of 820 cases 40 were premature, 21 were stillborn. The cord was twisted once or more times round the neck in 155 cases, or once in 5 cases.

The average duration of labour was  $10\frac{3}{4}$  hours. Out of the whole number three were instrumental cases. Four cases were preceded by puerperal convulsions; each was a primipara.

Placenta presentation occurred in *three* instances, or once in 273 cases. Two out of the three died; in all turning was practised. One child was born alive.\*

—The following statistical records of the Royal Maternity Charity are given by Dr. Lewis:

Total number of cases 20,000.

Living	.	19,443	Boys	.	10,422
Stillborn	.	820	Girls	.	9,841
		20,000			20,000

Presentations.

Head	.	.	19,468	or one in	1 nearly.
Face	.	.	153	"	131
Arm	.	.	65	"	312
Breech	.	.	357	"	56
Feet	.	.	179	"	112
Placenta	.	.	10	"	2000
Funis	.	.	31	"	666

Twins occurred once in 76 times.

Instruments were necessary once in 400 labours.

Hemorrhage occurred in 106, or once in 189 cases.

Placenta adherent in 60, or once in 333 cases †

\* New York Journ. of Med., Jan. 1847.

† Med. Times, Sept. 4.

§ III.—*Diseases of Children.*

The diseases of infancy and childhood have hitherto been much neglected in this country, as far at least as public means of instruction connected with them are concerned, and it is therefore with much gratification that we observe from the admirable lectures of Drs. West and Wilshire, now in course of publication in the "Medical Gazette" and "Medical Times" respectively, that class of ailments will in future obtain an amount of attention commensurate with their importance. Although it is not our habit in general to occupy the pages of the "Half-Yearly Abstract" with elementary lectures, we have departed from our rule in favour of the above courses, believing them to contain matter with which the profession at large in this country is far from being so familiar with as it ought to be. (See Arts. 97, 98). In our next volume we shall continue the series.

44. *Diseases of the Fœtus—Monstrosities.*—Mr. West has published the following details of a case of monstrosity, which caused him much difficulty during labour.

"The appearance presented by it was that of two perfectly formed and well-developed female children united from the umbilicus to the necks. They weighed, without the enormous liver and those portions of the intestines which were torn away, 11½ lbs. avoirdupois; and estimating the weight of the parts removed, and of the blood that was lost, at a pound and three quarters, I think we may safely assume that they would have weighed, if entire, 13 lbs., which is two pounds more than the average weight of twins according to Burns. The union at the top was formed by a common sternum, or rather by the clavicular extremities of two sterna united end to end, and passing nearly straight across. This double sternum was very short, and would, if removed, have presented the appearance of a nearly square piece of bone with a clavicle at each of the four corners. A kind of rapté could be felt at the point where the bits of sternum joined each other. Below the sternum on both sides, the true ribs were united by short pieces of cartilage which ran straight across from the ribs of one child to the corresponding ribs of the other. The cartilages of the false ribs turned upwards, and were attached to the under part of the cartilages of the lowest two ribs.

"The liver having been cut nearly in two, and torn away along with nearly all the intestines, it was impossible to ascertain the relative position of the parts in that portion of the abdominal cavity in which the sac of the peritoneum was common to both fœtuses. I have said there was but one umbilical cord, and as that was not at all thicker than the average, I imagined it possible that the children might each supply only one umbilical artery; but on examining the iliaes in one of them, I found that each iliac sent off its artery in the usual way. The aorta of the other fœtus, having been cut in two in the situation where the blunt hook had divided the spine, had been torn away along with both kidneys; but there could be no doubt that this child supplied two umbilical arteries as well as the other. The cord must therefore have contained four umbilical arteries; but for various reasons, which will be more apparent when I come to the description of the heart, I think it probable that there was but one umbilical vein. I regret that when I was searching into these matters the day after the delivery, the whole of the funis, as well as the placenta, had been made away with by the nurse.

"Attached to the under part of the rapté of the common sternum, which formed a kind of roof to the two chests, was a membranous bag extending across from side to side, and down to the diaphragm. On cutting into this, I found it was a pericardium containing a curiously-shaped heart, common to both fœtuses. Passing the finger along the top of this heart, I found that its only attachments were at each side, the middle part for the space of about two inches being free. Flat and shaped like a kidney, it seemed to lie evenly between the two chests; but by stretching it downwards it assumed some obliquity which I found was occasioned by the circumstance that each upper corner of the heart was connected with the right side of each fœtus. Each child had a complete pair of lungs, three lobes on each right side, and two on each left, the mediastina extending backwards from the centre of the common pericardium. Two thymus glands were attached to the under part of the sternum, separated from one another by the pericardium. Each fœtus had two kidneys, and the pelvic viscera in both were perfect and well-

developed. Although the liver was much torn and nearly cut in two, I was yet enabled to make out distinctly that it was a large one, common to both children. I could not find any gall-bladders, but probably there would be two; at any rate there must have been two ducts, one for each duodenum. The diaphragm was torn to shreds.

"I have said that as the heart hung loosely in its pericardium, it was placed evenly between each thorax, and that it was attached to the right side of each fœtus. This circumstance was rather puzzling at first; for it has an aorta at each upper corner, rising from a kind of ventricle immediately underneath it, so that the systemic ventricle of each individual would be in fact a *right* ventricle, and not a left one with reference to the fœtus to which it belonged. But the fact is that, in the natural state of things, the aorta arises on the *right* side of the heart, to the *right* of the pulmonary artery, on the *right* side of the thorax, and passes across the spine to the left side; and that, notwithstanding its ventricle lies somewhat to the left, but more behind the heart. Therefore, as the aorta must arise on the right side, it seemed a kind of necessity that, constructed as the heart about to be described is, each systemic ventricle should be situated on the right side of the fœtus to which it belonged.

"So much for position. The heart itself is shaped like a kidney, and weighs exactly one ounce avoirdupois. On external examination it is found to possess the following peculiarities: one enormously large auricular sinus, having two openings into it at one corner, supposed to be the openings for a common superior and inferior vena cava, with five auricular appendages, one very large under the openings for the cavæ, two at the other corner, looking like another large one split in two, and two smaller ones near to each other, hanging down on the other front of the heart between the roots of the two aortæ—all these appendages communicating internally with the large auricular sinus. An aorta at each side of the heart, and a single pulmonary artery having its root near, and passing under, that aorta which is situated nearest the openings for the cavæ. These three vessels are all furnished with semilunar valves. No traces of pulmonary veins can be found.

An incision along the top of the auricular sinus, and down one front of the heart into the middle cavity, exposes nearly the whole internal structure. In the middle of the floor of the auricle is a large opening into a kind of ventricle. Round this opening four valves, of the kind called *tricuspid* or *mitral*, but not properly called either in this instance, hang down into the ventricle. A director passed into the pulmonary artery enters this ventricle, under the valve numbered (2) in the sketches. The valve numbered (4) is tied down by its columnæ carneæ to a thick muscular septum ventriculorum. The valve numbered (3) is tied down to another set of columnæ carneæ, which form the only division between the middle ventricle and the systemic ventricle on that side—the two ventricles communicating freely with each other between these muscular columns. A large rounded hole is found in the upper part of the septum, lying between the middle ventricle and the other systemic ventricle. This hole is under the valves numbered (1) and (4), and through it there is a free communication between these two ventricles. Thus it seems that, in point of fact, all these three ventricles are as one. The two systemic ventricles, on being cut into, are found to have no communications with anything but with the middle ventricle in the way just described, and each with its aorta. No traces of mitral valves can be found in either of them, and they are not needed, for their proper auricles are equally wanting; and the most careful search can detect nothing like pulmonary veins, though I am inclined to suspect that the openings marked (i) in figure 5, which terminate in a small cul-de-sac in the muscular wall of the heart, are abortive ones.

"Thus this heart may be said to consist of but one auricle for the admission of blood, and one ventricle for its expulsion by means of three arteries. It is evident, therefore, that though it might do very well to support fœtal life, even for both children, it could not have supported extra-uterine life for more than a few minutes. The blood might be sent by the common pulmonary artery to both sets of lungs, but it could not come back again. If the septa between the ventricles had remained incomplete, black blood would have been sent out by each aorta to the general system, as well as by the pulmonary artery; and if by any means the septa had been made complete, as in the case of the closure of the foramen ovale



in the perfect fetal heart, the systemic ventricles would have been useless, as they could not have been filled.\*

—A paper on monsters, with eventrations, by Mr. Hallet, will be found in the "Edinburgh Medical and Surgical Journal," and an account of the dissection of two anencephalous monsters, by Mr. Poland, in the last volume of "Guy's Hospital Reports." These papers are too purely anatomical for this Report.

45. *On Blood-letting from the Jugular Vein in the Diseases of Children.*—The object of the present communication is to show the great advantage of selecting the external jugular from which to draw blood in diseases of young children, instead of the veins of the arm or temporal artery. The author observes:

"I would make this operation the rule instead of the exception in many of the acute affections of children under two or three years of age, and also in older subjects, in certain diseases of the brain and trachea. As the head in infancy is larger in proportion to the size of the body than in the adult, so also is the cerebral vascular system more developed, and hence we find the jugulars relatively larger and more prominent in the first years of life. But in what, let us inquire, consists the advantage of opening the jugular, in the diseases of children, over the more general operation of venesection in the arm? In the first place, let me endeavour to prove that this operation is practically more simple, safer, and also more efficacious in the arrest of certain acute diseases. It is more simple, inasmuch as the external jugular in a child is at least double the size of the veins of the arm, and consequently much more easily found and opened. It is more simple, on account of the more rapid flow of blood from this vein; and also in dispensing with a part of the usual apparatus for bleeding in the arm. The practitioner is often baffled in the attempt to bleed from the arm. These difficulties are very seldom found in letting blood from the jugular."

It has been objected, that in operations upon the jugular there is danger of sudden death from admission of air. This objection the author conceives to be purely imaginary, if the operation be properly performed. It is true that in extirpation of tumours low down in the neck, where the jugulars have been completely cut across, and from the presence of hardened tissue could not collapse, air has been drawn into their open orifices in expanding the chest, and death has followed almost instantly. Again, in operating upon the cicatrix of a burn in the neck, the danger from admission of air is very urgent, simply because the firm tissue through which the vein passes will effectually prevent its open orifice from collapsing by atmospheric pressure. So far as the author is aware, there is no case on record of death from admission of air resulting from simple puncture of the external jugular in venesection. Nor does he believe such a result possible in a healthy state of the parts, if the operation be properly performed. To render the measure perfectly safe, let the pressure be applied at the point where the vein passes the first rib; let the vein be opened midway between the clavicle and angle of the jaw, and let the compress be applied to the orifice before the pressure is taken off the vein below.

The safety of the operation may, he states, be inferred from the fact, that the jugular is almost invariably selected in letting blood from the lower animals; and although the operation is often done in the most unskilful manner, yet injurious consequences very seldom follow.

In simple inflammations, the danger of phlebitis need not be taken into the account in this or other operations on veins; but in typhoid, or malignant disease, the jugular, from its size and position, had better be avoided. In such cases, however, general bleeding is seldom required.

Among the diseases in which the author advises bleeding from the jugular, we may mention inflammation of the larynx and trachea: inflammation of the membranes and substance of the brain; and congestion of the cerebral organs, accompanying or preceding convulsions.

Here blood is taken so nearly from the seat of disease, that the operation appears to have the effect of topical and general depletion combined, and hence its prompt and very decided salutary influence.

He also much prefers letting blood from the jugular in the acute inflammations

\* Edinb. Med. and Surg. Journal, Oct. 1847.

of the thoracic viscera in young children. One of the chief advantages of the operation is the great rapidity with which blood flows from a free orifice in this vein. A decided impression can thus be made upon the system in a very few moments, and with much less loss of blood than would be required to produce the same effect from a vein in the arm, or by the still slower process of leeching or cupping.

Conceiving that the mode of opening the jugular is not satisfactorily described in books, the author gives the following directions for performing the operation :

The nurse having exposed the right shoulder of the child, and secured the clothing from the flow of blood, seats herself upon a low chair, and in holding the child across her knees, carefully confines the arms. The surgeon, seated at her side, receives and secures the child's head between his knees. With the thumb of the left hand he now compresses the jugular where it crosses the first rib; while the remaining part of the same hand is employed in fixing the chest of the child against the person of the nurse. The right hand of the operator being at liberty, he makes a free opening into the vein with whatever form of lancet he is accustomed to use. The blood is received in a cup, the edge of which applied a little below the orifice, likewise serves to compress the vein. From a robust child blood escapes with astonishing rapidity, particularly when the child cries or struggles. No effort should, therefore, be made to quiet the patient. His cries should rather be encouraged, as they expedite very much the operation. A sufficient quantity of blood is very soon lost, to produce the constitutional effect required. The colour of the lips and cheeks of the child will tell the surgeon when syncope approaches much more certainly than will his finger upon the pulse. The quantity of blood desired having been lost, a compress is applied to the orifice, and the pressure taken off the vein below. After the child becomes quiet, the compress is removed, and the wound closed by a piece of court or adhesive plaster, which the physician should always carry with him for the purpose. This is much the best dressing. The bandage and compress usually advised is very objectionable. It not only obstructs the free return of blood from the head, but its presence irritates the patient, and if not well adjusted may promote the flow of blood or interfere with respiration. If, however, all pressure be removed from the vein below, blood will not escape if no dressing be applied, except the child cry or struggle. We, therefore, much prefer, if the proper dressing be not convenient, to leave the orifice uncovered, and direct the nurse to apply the compress for a moment, should blood escape during the cries of the child."

Here, perhaps, it may be asked at how early an age is general depletion justifiable in a child? To this the author replies that the age of the patient should not be taken into the account, but simply the violence and locality of the inflammation. A few leeches are equivalent to general depletion in very young subjects; and in inflammations of mucous membranes in general, and abdominal viscera in particular, are no doubt much to be preferred to the use of the lancet. But in open, clearly-marked, acute inflammations of the brain and membranes, lungs, and pleura, and trachea, accompanied by high fever, he much prefers the bold and rapid abstraction of blood from the jugular, whatever may be the age of the child. And he is well convinced that less blood will be required to produce the necessary effect in these diseases, than if drawn by leeches. In illustration of his proposition, the author adduces cases of hydrocephalus and croup.\*

[We agree with the author that the danger of opening the jugular, as far as regards the admission of air, is altogether imaginary; but we differ from him in toto as to the advisability of the operation in the general inflammatory diseases of childhood; we have seen more children lost from the *nimia medici diligentia* in this matter, than from the omission of blood-letting. The reader must recollect that the writer is living in a country the practice of which is still much influenced by the sanguinary precepts of Rush.]

46. *Fatal Hemorrhage from the Umbilical Cord three days after Birth.*—Dr. Keiller stated to the Edinburgh Obstetrical Society that he had been called to examine a case of fatal umbilical hemorrhage. It occurred in a fine, plump, male child,

which was affected with vomiting from time to time. On the third day, it was discovered that the binder, &c., of the child were soaked with blood from the navel. The cord was not examined for two or three days afterwards, when it was found that the bleeding point was at the root of the cord, to which was applied nitrate of silver, which seemed, at the time, to be sufficient to prevent the further continuance of the hemorrhage. Before half an hour had elapsed, however, the medical attendant was again summoned, when he tied a ligature around the umbilicus, embracing a portion of the skin which formed its circumference. The treatment proved too late, for the child died in a few minutes after the application of the ligature.

47. *Scleroma of the Cellular Tissue in Newborn Children.*—Dr. Eman Mildner, of Prague, observes that the disease attacks many children who have been treated, when in a state of asphyxia, successively by tepid and cold affusions; its greater frequency during cold or humid cold seasons; its sudden occurrence in many newborn infants, who, after warm bathing, were exposed incautiously to cold; and its presence in children born in the street, and during the first days of life, are facts which indicate the great influence of a change in temperature in producing this disease. In the treatment, great care must be taken to prevent the disease, by avoiding, as far as possible, exposure of the child to any change of temperature. In foot and breech presentations, the parts which first appear should be carefully covered with warm clothes. The employment of cold affusion after tepid baths, for the revival of asphyxiated children, should be restricted to very rare cases. In the first degree, the most successful treatment consists of warm, dry, and aromatic fomentations; friction with flannel sprinkled over with camphor; tepid baths and diaphoretics. In the second degree, treatment is seldom beneficial; cold affusion is suggested at first, and then, having dried the parts, to cover them with flannel, and to employ the same means as in the first degree. Post-mortem examinations yield satisfactory proof that morbid alterations of deep-seated organs are not connected with the origin of sclerosis, as there are many cases in which no changes but those in the skin can be discovered; that, when such alterations have been found, they, in most cases, are in no way related to the integumentary disease; that their presence, notwithstanding, considerably influences the progress of the case.

48. *Ophthalmia Neonatorum.*—Mr. Whitehead, in his work before mentioned, as well as in a paper in the "Provincial Journal," alludes to the frequent origin of this disease from inoculation with the secretion from ulcerations of the uterus unconnected with gonorrhœa, and alleges this as an additional reason for curing these lesions prior to delivery. In the treatment of the ophthalmia he prefers Mr. Walker's plan of pencilling the inner surface of the lower eyelid with solid caustic.\*

—Dr. Eschrich states, that in the ophthalmia of new-born infants, he has always effected a perfect cure in shorter time than usual (one week), by surrounding the eye or eyes with a thick layer of mercurial ointment. Mr. Wilde states that he should be sorry to trust a severe case of this disease to this remedy, and the Munich physician acknowledges in his paper that, in addition to the mercurial inunction, he uses frequent injections of tepid water, and when the swelling and discharge have lessened, he employs a weak caustic solution. Professor Von Ammon recommends a lotion of six grains of extract of belladonna and ten drops of lime-water, to four ounces of distilled water; with this the eyes are to be steeped every half hour, and in the interim, a bandage wet with the solution is to be applied over the eyes. His object in using the belladonna is to allay the spasm of the eyelids, and by facilitating the matter, to allay the swelling of the conjunctiva and cornea. This certainly is not heroic practice, and few practitioners in this country would trust a patient to it alone. Having constantly remarked an extensive state of ulceration in the conjunctiva of the upper lid in the severe forms of this disease, Mr. Wilde now generally everts the lid, to examine its inner surface, as soon as a case presents itself, and has several times succeeded in cutting short the disease, by at once applying a strong solution of nitrate of silver to this part alone. He begs to call the attention of ophthalmic surgeons to this subject.†

\* Oct. 6, 1847.

† Mr. Wilde's Report, Dublin Journ., Feb. 1847.



—M. Chassaing affirms that he has discovered the presence of a thin false membrane on the surface of the sclerótica and eyelids, which aggravates the disease by acting as a foreign body, and prevents the application of remedies. He removes this with forceps, and then relies upon repeated and forcible douches of cold water to the conjunctiva\*.

49. *Croup, Solution of Nitrate of Silver to the Larynx in.*—In our Report on Practice of Medicine in the present volume, we have given an account of Dr. Green's success in the laryngeal affections of the adult, by cauterizing the larynx with a solution of nitrate of silver. Dr. Blakeman, of New York, has adopted the same plan with advantage in croup, and records the following two cases:

The first case was a child, *æt.* 2, large and fat. He was seen five hours after the commencement of the attack, with a hot dry skin, quick pulse, laborious croupy respiration; free vomiting and purging produced no relief. Dr. Blakeman, therefore, used a solution of argenti nitrás (3j to 3j) by means of a sponge. The first application brought away a quantity of tenacious matter. A second application, in ten minutes, brought a still greater quantity away. A third application was made, in five hours, with increased advantage, and next day the child was convalescent. In the second case, two applications were sufficient.†

—Dr. Latour used the solid nitrate, in a case of croup, to all the parts within reach. He afterwards applied a solution, by a piece of lint between forceps, and contrived, by squeezing it, to cause some of the fluid to pass into the larynx; the child recovered.‡

—Dr. Meigs also approves of caustic to the fauces, as may be seen by a reference to Art. 99.

50. *Pertussis.*—Dr. Duncan insists upon the propriety of regarding whooping-cough as an exanthematous disease, and asserts that it exhibits all the more constant characters of that class of diseases. The essence of the disease he conceives to be “a turgescence of the bronchial glands coinciding with, or arising from a peculiar fever, and the result of a specific poison.” Dr. Duncan appears to think that he is original in the theory of the exanthematic origin of whooping-cough: but in this he is in error. The same extraordinary doctrine was, some time since, broached by Volz (*Höser's Archiv*, *bd.* iv., *hft.* 3). The idea at that time appeared to us too hypothetical for notice, or we should not have passed it over.

The explanation of the influence of the bronchial glands in the production of the disease is the same as that given by Dr. Ley to account for the paroxysms of laryngismus, viz. a reflex action caused by irritation of the pneumogastric nerves. Dr. Duncan gets over the difficulty of the paroxysmal character of the symptoms by assuming that the turgescence of the bronchial glands is intermittent. Dr. Duncan admits his opinion to be only hypothesis, and such we conceive it will be esteemed by our reader.§

—Two papers have also lately appeared in the “*Provincial Medical and Surgical Journal*,” with the object of explaining the pathology and treatment of pertussis.

—Dr. Fife looks upon it as a neurosis, and altogether distinct from bronchitis, and affirms, moreover, that the two diseases cannot co-exist; in proof of which he institutes the following comparison between the two diseases:—

“Pertussis is essentially a disease peculiar to infancy and childhood.” [This is not strictly correct; we have known three or four well marked instances in the adult.] Bronchitis occurs indiscriminately at all periods of life.

“The cough in pertussis, is spasmodic or convulsive, always occurs in paroxysms, and frequently assumes a periodical type. In bronchitis it is casual, and, though frequent and severe, rarely induces vomiting.

“In pertussis the patient is commonly well during the intervals; in bronchitis there is no intermission, though there may be a remission in the symptoms.

“Pertussis almost invariably occurs as an epidemic, with bronchitis this is exceptional.

“Pertussis is unattended with fever; bronchitis in its mildest form presents febrile disturbance.

\* *Bullet. des Acad.*, Aug. 23. *Gaz. Méd.*, Sept. 4.

† *New York Med. and Surg. Reporter*, and *Month. Journal*, Oct. 1847.

‡ *Gazette Méd.*, Aug. and October.

§ *Dublin Quart. Journ.*, Aug., 1847.

"The cough in bronchitis is not attended by the whoop; whilst in pertussis this symptom is pathognomonic, and is lost as soon as inflammation of the bronchial tubes actually sets in. Finally, the treatment of bronchitis has little if any effect in whooping-cough."

In the treatment of pertussis Dr. Fife deprecates depletion, unless active inflammation be present. Internally he relies upon full emetics, aided by alkalies and cochineal. He also speaks favourably of sedative liniments to the chest and spine.\*

—In an essay by Dr. Ogier Ward, which appears in a subsequent number of the same journal, some of the preceding opinions are criticised. The author objects, *in limine*, to the exclusive view of the neurotic character of the disease as one unsafe in practice. He then examines, seriatim, the six propositions which we have recapitulated, and furnishes us with his own pathological opinions. In his observations upon Dr. Fife's propositions we do not see any remarks to detain.

In detailing his own views of the pathology of whooping-cough, the author proceeds to describe it "as a zymotic disease affecting primarily the mucous membrane of the air-tubes and the blood, and secondly, the medulla oblongata and respiratory nerves, producing a violent and convulsive cough," &c. He concludes that the first stage consists in irritation of the air-passages, which, producing an increased secretion of mucus, excites the cough. To explain the "whoop," the peculiar feature of the second stage, he recapitulates the well-known excito-motory physiology of the larynx, and proceeds as follows:—

That congestion or irritation of the medulla oblongata is sufficient to produce the spasmodic contraction of the glottis which causes the whoop, we have strong confirmation in the source of the crowing respiration; but we derive still stronger arguments in favour of this view, from the consideration of many of the exciting causes of the paroxysm of whooping-cough, the influence of which is to be explained by their effect in inducing such a state of the medulla. Thus all violent and sudden emotions, and their expressions, as laughing, shouting, &c., disturb the action of the heart, which either directly, or by reaction, expels the blood towards the head with greater force, and thus immediately excites the cough. Again, during sleep there is a tendency to congestion of the brain independently of the horizontal posture, which also augments it, and hence the cough is troublesome at night. It may be objected that similar causes will provoke an access of cough in other catarrhal affections, and especially in asthma; but admitting this to be the case, I contend that the cough is not so easily excited, nor is it so violent in ordinary catarrhs as in pertussis, and the exception of asthma favours rather than opposes this view, as there is always a greater or less amount of cerebral congestion in the nervous form of that disease.

The prolongation of the paroxysms of coughing after the first series of expulsive efforts, and the consequent whoop, have terminated, is to be explained by the persistence of some irritation, either of mucus in the bronchi, or of food in the stomach, for when these have been emptied of their contents, the paroxysm terminates. The consideration of this symptom of vomiting has hitherto been omitted, because it is neither peculiar to whooping-cough, nor invariably present, and because it is more or less an attendant upon all severe fits of coughing, from whatever cause, in many persons. Indeed, when we reflect upon the numerous sympathies of the stomach, besides its own affections, that may induce vomiting, it is almost impossible to fix upon any one sole cause of the symptom in whooping-cough; for instance, the vomiting may be the effect of the mechanical compression of the parietes of the stomach by the efforts of coughing, which also overcome the resistance of the other sphincters; or it may arise from the irritation of the larynx and bronchi, by the mucus being transmitted to the stomach, as occurs when the fauces and larynx are tickled by a feather; or from a similar transmission of the specific irritation by means of the par vagum to the stomach; or it may be the result of congestion of the brain by the cough, either simple or specific, producing its usual effect of vertigo and sickness. On these grounds the solution of this question may be fairly left for future discoveries. At present our view of

\* Prov. Med. and Surg. Journal, June 16, 1847.

the pathology of the cough is not rendered clearer, whichever we may adopt as being the cause of the vomiting that occasionally attends it.

From what has been stated, we may briefly recapitulate the series of events that constitute the pathology of pertussis in the following order of sequence: Specific toxication of the blood, inducing irritation of the bronchi and increased secretion of mucus, and consequent congestion of the lungs; toxication, and congestion of the brain and medulla oblongata by the blood, now rendered still more vitiated by the pulmonary congestion, which, producing specific irritation of the respiratory nerves, renders them more easily affected by slight stimuli, and causes irregular contractions of the muscles, under their influence, so as to produce a spasmodic cough of a peculiar kind.

Dr. Ogier Ward agrees with Dr. Fife in the main as to treatment, but he has recourse to leeches when the features are puffly, the eyes bloodshot, and there is general oppression with mucous râles in the lungs. He also mentions the importance of changing the position of the child during sleep, to prevent any sanguineous stasis in any portion of the lungs.\*

51. *Deformity of the Chest in Children* — This subject has been recently discussed in the London Medical Society. Mr. Hird related one of the cases of this deformity which he has seen. It occurred in a little girl now seven years of age. He attended her at the age of six months, when she was suffering from extreme difficulty of breathing, which obliged her to let go the nipple when sucking; the tonsils were found much enlarged, and a portion of them was removed, with much relief to the breathing at that time. He had been attending her again lately. She had cough, and a slow, irregular pulse. The abdomen was tumid; the sternum prominent; and there was a projection of the spine backwards about its centre. There was a depression on each side of the chest at the union of the ribs with the cartilages, and a sinking in of the chest at the sides during each inspiration. The tonsils were much enlarged, and he had always found them so when this particular deformity was in existence. Baron Dupuytren, who had written on this deformity, had noticed the enlargement of the tonsils in connection with it; and he had recommended a peculiar mechanical treatment for it, part of which consisted in the application of pressure by the nurse on the sternum during expiration, and withdrawn during inspiration. He (Mr. Hird) had found this treatment of service.

Dr. Snow said that this kind of deformity had been noticed by writers in this country as well as by Dupuytren; and he (Dr. Snow) had read a paper on it to that Society several years ago. The cases which he then related depended, however, on enlargement of the abdomen; but he had at that time explained how it might be occasioned by enlargement of the tonsils, when it was so great as to impede the ingress of air to the lungs. Whilst the diaphragm, by its contraction, tended to enlarge the capacity of the chest, the air, unable to enter and distend the lungs, forced inwards by its pressure the still delicate and flexible sides of the thorax of the child.

Dr. Murphy considers that this kind of deformity depended on scrofulous disease, which interfered with the growth of the bones of the chest; and that although enlargement of the tonsils, disease of the lungs, or other causes, might assist in its production, they could not of themselves occasion it. In the infant the abdomen was large in proportion to the chest; and if, from scrofulous disease, the chest did not grow properly, these infantile proportions would be preserved; the belly, getting larger, would cause the sternum to project, and the sides of the chest to be flattened; and if there was obstruction to the ingress of air from enlarged tonsils, or any other cause, the atmospheric pressure might press on the flattened sides of the chest.

Mr. Streeter considered that the walls of cavities were influenced in their shape by the contained organs, and not by external causes; and that the form of the chest would depend on that of the lungs and heart, as the skull does on that of the brain.†

\* *Prov. Med. and Surg. Journ.*, Oct. 20, 1847.

† Reported in *Lancet*, May 1, 1847.



## IV.

# REPORT ON THE PROGRESS OF ANATOMY AND PHYSIOLOGY.

### § I.—*Osteology.*

1. *Archetype of the Vertebrate Skeleton.*—Subsequently to the date of our last Report, anatomical science has been advanced by the first complete sketch of the ideal skeleton, founded by the philosophy of Oken, raised by the researches of him and other anatomists, and now perfected by the profound knowledge and rare powers of combination of Professor Owen.\* According to this view, the vertebrate skeleton consists of a series of transverse segments, which together make up the axis and the protecting canals of the nervous and vascular trunks, and each in its typical completeness supports a diverging appendage. Greatly modified as the archetype may become, every segment preserves relations so striking, that it is unnecessary almost to retrace the steps of mutation, in order to perceive even in the skull of man, where the modification of the type is greatest, the adherence to this natural law. It would exceed the limits, and trespass on the province of this Report, to enter at large into the interesting argument for the adoption of a general idea as the assumed design of the skeleton; indeed, unity of organization must have an import in anatomy similar to that of grammar in language, for as the one without rules is but a vocabulary, so the other without laws can be only nomenclature.

Such a segment of the skeleton as the above, consists of the axis or "*centrum*,"† of pieces which together compose the canal which lodges the nervous trunk, viz., two "*neurapophyses*" and a "*neural spine*;" of pieces defending the vascular trunks, viz., two "*hæmapophyses*" and a "*hæmal spine*;" further, of two "*diapophyses*" and two "*parapophyses*," which are transverse processes (upper and lower) of the centrum, and two "*pleurapophyses*," or ribs. There are besides exogenous processes from both neur- and hæm-apophyses anterior and posterior to them; these are "*zygapophyses*," or articulating processes.

It is the aim of this philosophical anatomy to place all the bones of the skeleton under that head in the above category, to which it appears to be most naturally allied; this is attended with considerable difficulty even in the trunk vertebræ, but in the cranium, where great expansion, and, to the eye, confusion of elements has taken place, it is rendered next to impossible to arrive at determinations which may not be challenged. The type assumed is at best only that which appears to include most completely the various elements which unquestionably do hold precise and unvarying relations, and we may safely adopt that arrangement which has been some time produced by Professor Owen, and which has stood the test of strict examination. We agree with him, "that the osteology of man cannot be fully or rightly understood until the type, of which it is a modification, is known, and the first step to this knowledge consists in the determination of the vertebral segments, or natural groups of bones, of which the myelencephalous skeleton consists."‡

2. *Modification of the Archetype of the Human Skeleton.*§—In the trunk the seg-

\* Report of British Association, 1846, and Lecture on Fishes, 1847.

† For the excellent reasons which Professor Owen has assigned for the use of new names, we refer to the Report, p. 1, &c.

‡ Mr. MacIise has published a work on the Archetype Skeleton, which we have not had the advantage of perusing.

§ Vide Report, l. c.

ments are all distinct in the axis until the sacrum, when, in addition to the anchylosis which in all the previous segments joined the centrum to the neurapophyses, &c., the centre of five distinct segments blend together. It has lately been shown by Professor Owen,\* that the atlas is peculiarly modified as to its centrum, in all mammals, birds, and reptiles, except batrachia; the medullary portion of the notochord is only ossified so far as the atlas, and even there what properly belongs to that segment, is retracted and becomes anchylosed, or (in reptiles) immovably united, to the succeeding segment, forming thus the odontoid process of the second vertebra of the neck. That portion of the atlas which is generally named body, is then only an autogenous ossification of the capsule of the notochord; it is, however, the immediate homologue of the existing centrams. of the cranial vertebræ in these higher animals. The cranial segments are four in number, and their axes are from behind forwards:—1st. *Basi-occipital*. 2d. *Basi-sphenoid*. 3d. *Basi-pre-sphenoid*. 4th. *Vomer*. Of these, the 4th alone preserves its distinctness, but the other three are anchylosed to one another, and to their neurapophyses.

The *neurapophyses*, "*laminae*," of all the trunk vertebræ are anchylosed to their centrum and to their spine; those of the first cranial segment are the "exoccipitals," and bear the condyles; they are distinct only in the fetal age; the second pair are the "alisphenoids;" the third pair the "orbito-sphenoids" (processes of Ingrassias); and the fourth are the "prefrontals" (cribriform plates of the ethmoid). The law which the neurapophysis obeys, assigns it the office of protecting the side of the nervous cord, and more particularly guarding the exit of its particular nerve; therefore it is that the exoccipital is pierced by the ninth nerve, and helps to protect the eighth; that the ali-sphenoid is pierced by the fifth nerve; that the orbito-sphenoid in like manner protects the optic nerve, and that the prefrontal lodges the olfactory lobes, and is pierced by its numerous nerves. The *neuralspines* of the cranial segments are:—1st. The supraoccipital. 2d. The parietal. 3d. The frontal. 4th. The nasal. They suffer great expansion, and are permanently or temporarily double, in consequence of the great development of the brain, which it is their office to protect. They gradually become depressed, and disappear in the last sacral and coccygeal vertebræ. Both *diapophyses* and *parapophyses* are present in the cervical vertebræ, and form with the anchylosed or immovably joined rudimental rib, *pleurapophysis*, the foramen for the vertebral artery. In the dorsal vertebræ, the parapophysis disappears, but the diapophysis enlarges, and to it the tubercle of the rib is united, whilst in the lumbar vertebræ this is anchylosed entirely to it, and projects laterally as the so-called transverse process. In the sacrum, transverse processes and ribs of the five vertebræ are blended in the thick lateral portions against which the ilia abut. The parapophyses of the cranial segments are:—1st. The *paroccipital*, which in the human cranium exist only at a very early period of ossification, and subsequently blend with the exoccipitals. 2d. The *mastoid*, which in mammals gains a very close connection with the special ossification of the capsule of the internal ear, but is perfectly distinct in its development. 3d. The *post frontal*, which appears in man only as the external orbital process of the frontal. 4th. Absent. *Pleurapophyses*, or ribs suitably elongated, curved, and attenuated in the thorax, are quite rudimental, and commonly anchylosed at both their junctions, by head and tubercle, with the cervical transverse processes, and are blended with the diapophyses in the lumbar region. The first sacral segment has a distinct pleurapophysis, namely, the *ilium*. The first cranial pleurapophysis is the *scapula*, which in mammals is removed from its proper segment. The 2d is the *stylophal*, reduced in the higher vertebrates to the slender styloid process of the temporal. 3d. The *tympanic*, exceedingly modified and reduced, forming the bony frame of the tympanic membrane. 4th. The *palatal*, which remarkably betrays its essential character in retaining a connection with the prefrontals by means of the *ossa plana ethmoideæ*. *Hæmapophyses* exist in the thorax as cartilaginous sternal ribs appended to the pleurapophyses, are wanting in the cervical, and only shadowed in the lumbar region by the transverse lines crossing the rectus abdominis. In the pelvis, the hæmapophysis of the first segment is the *pubis*; of the second, which is ossified, quite independently, is the *ischium*. The 1st cranial hæmapophysis is the *coracoid*. The 2d is

\* Annals and Mag. of Nat. Hist., Oct. 1847.

the *ceratohyal*, superior cornu of the hyoid. The 3d is the *mandibular*, or lower jaw. The 4th is the *superior maxillary*. *Hamal spines*, exemplified in the sternum, are found in the three anterior cranial segments, viz. basihyal, premandibular and premaxillary. The following bones form a *diverging appendage* of the 4th, nasal, segment of the cranium in man, viz. the pterygoid, the malar, and the squamosal (squamous portion of the temporal). The bones of the anterior extremity, namely, humerus, radius and ulna, carpus, metacarpus and phalanges, constitute the *diverging appendage* of the occipital vertebra. Lastly, the bones of the posterior extremity, namely, femur, tibia and fibula, tarsus, metatarsus and phalanges, constitute the *diverging appendage* of the sacral vertebrae, more especially the first.

3. *Special Laws affecting the Individual Parts of the Skeleton*.—Not the least instructive part of Prof. Owen's Report is that where he seeks to define the characters of individual bones; thus we find some to be ever engaged in the protection of the organs of sense: of this number are the alisphenoid and mastoid. The conditions which appear to him most proper to the "*alisphenoid*" are:—1st, its connection below with the basisphenoid, and behind with the petrosal, where it forms the forepart of the otocrane or cavity for the reception of that osseous or cartilaginous capsule of the labyrinth or internal organ of hearing: the alisphenoid is also commonly, but not constantly, joined before with the orbitosphenoid, and above with the parietal; it has other less constant connections with the squamosal, the exoccipital, the supraoccipital, and the basioccipital; 2d, with regard to its essential functions, the alisphenoid protects more or less of the side of the mesencephalon, or (in mammalia) of the middle lobe of the hemisphere; "it gives exit, by notches or foramina, to the third, and usually also to the second divisions of the trigeminal or fifth pair of nerves." The fact of this bone having been confused with that proper to the labyrinth of the ear, makes it important to recognize the "*petrosal*" (*rocher* of Cuvier) under its essential character "immediately enveloping the whole of the vascular and nervous trunks of the labyrinth or internal organ of hearing, either in a membranous, a cartilaginous, or an osseous state, its histological condition being much less constant than that of the alisphenoid."<sup>22</sup> The "*mastoid*" has a very constant relation to the acoustic chamber, contributing largely to its walls, and, in man, as well as most mammals and birds, becoming ankylosed to the petrosal; it has, besides, in mammals, sutural connection with the exoccipital, parietal, and squamosal; it is also grooved, notched, or perforated by the lateral venous sinus.

Again, it is extremely interesting to observe the law which has guided the author in his determination of the prefrontals in man, namely, that they are always the protectors of the rhinencephalic lobes; in the human cranium they are adapted to the position of the nasal passages, and gain a connection with the ossified capsule itself, whilst they are pierced by many holes in proportion to the surface requiring nervous influence.

4. *Atlas and Axis*.—Prof. Owen\* expresses his opinion, after comparisons of certain reptiles, and the ichthyosaurus, that the so-called body of the atlas is not its true centrum, that is to say, the medullary portion of the notochord ceases to become ossified, at the situation of the atlas, and the only representative of that medullary part proper to this vertebra, is ankylosed to the axis, constituting thus the odontoid process. The cortical part of the notochord, however, affects a distinct ossification to which the neural arches are joined; it is this autogenous ossification which forms the so-called body of the atlas; it is the homologue of the basioccipital, the basisphenoid, the basipresphenoid, and the vomer, which are similarly developed, ossifications of the cortical part of the notochord of the cranial vertebrae.

5. *Osseous Corpuscles*.—The researches of Mr. Quekett,† which led him to conclude that the bone-cells of vertebrate animals vary in magnitude as well as in form in the different classes of animals, and are therefore characteristic of the class to which they belong, have also suggested to him a correspondence in magnitude of the permanent bone-cell and the temporary blood-corpuscle; the siren, which is

\* Annals and Mag. of Nat. Hist., Oct. 1847.

† Transactions of the Microscopical Society, 1847.



known to possess a blood-disc of greater size than any other reptile, has also enormous bone-cells.

## § II.—*Myology.*

6. *Involuntary Movements.*—In an excellent paper, by M. T. Debrou,\* the involuntary movements which are effected by muscles of *animal* life, are admirably discussed. He points out that the will has but a feeble influence upon certain of the muscles belonging to this class, at least that others are placed under its dominance more entirely; and he proceeds to classify these exceptional muscles. In his first class he places “those movements, the involuntary execution of which is invariable, identical, and independent of circumstances of education,” for instance yawning, sneezing, vomiting, expectoration, &c., which are always performed in the same manner by the same individual, and by other persons; whilst experience is no aid to their better performance. In his other class are placed involuntary movements which have not the regularity of the former, and may result from a slow, continued practice of the will; they may be wanting in some individuals, and are not performed alike by all; for instance, shrinking movements for protection arising out of fear; instinctive movements of gesture and imitation.

1st Class—Variety 1. *Movements of muscles associated with their congeners.*—Here are assembled, with reason, muscles meeting and interlaced at the median line, e. g., pharyngeal, palatal, laryngeal, and perineal, whose movement is never isolated; but besides these are included the elevators and depressors of the eye, and the internal and external intercostal muscles, whose action is essentially distinct, and certainly ought to fall under some law more definite.

2d variety. *Movements of muscles associated with antagonists.*—A striking instance of this is seen in the action of directing the eyes to an object right or left of the front, during which movement the external rectus of the one eye is associated with the internal of the other. M. Debrou is satisfied that this movement is not one learned by progressive voluntary directing influences.†

3d var. *Movements of suction, deglutition, micturition, and alvine evacuation, &c.*

4th var. *Respiratory movements*—both of free natural respiration, and difficult.

5th var. *Sympathetic movements.*—These are the actions of sneezing, &c., which we find it out of our power to effect by our will alone; the imitation of laughter, for instance, is imperfect, and does not take place with that convulsive associated movement of the muscles concerned. The author states his opinion that the acts of voluntary vomiting, of which some persons are capable, do not resemble true vomiting, but are rather acts of mere regurgitation.

6th var. *Movements of expression*—M. Debrou here objects to the use of the term respiratory nerve of the face applied by Sir Charles Bell to the facial—looking upon this as the nerve of expression of the face, and esteeming it associated with the respiratory muscles as well as other muscles of the body—only in its sympathetic relation in all. In all the above there remains only the consciousness of the performance of the movement to distinguish such involuntary acts from those of organic life.

Second Class—1st var. *Movements which are voluntary or involuntary according to habit acquired.*—Thus by exercise we are enabled to contract the eyebrows individually, or the posterior aurial, whilst by non-usage they become disobedient to the will, and yet perform involuntary movements.

2d var. *Involuntary movements to avoid danger.*—Closure of the eyelids to escape a threatened blow on the eyeball is an instance in point.

3d var. *Involuntary movements of irritation*, such as those which we make on seeing another fall, or the acts of self-defence instinctively performed when a blow is threatened.

4th var. *Involuntary gestural movements*, which accompany speech, for example.

\* Archives Générales de Méd., Sept. 1847.

† We think that the fact of the preservation of the mode of nervous supply to the muscles of the eye, prevalent among the lower vertebrates, is a better argument in favour of the influence of education, than the possibly ill-observed actions of the eyes of the newly born is against it.

In prosecution of his inquiry, M. Debrou, in a second paper,\* discusses the opinions which are held on the subject of the kind of dependence which the above movements have on nervous influence. Allowing that most of them are explicable by the received theory of reflex action, he finds this insufficient to account satisfactorily for the co-ordination of these movements, except upon the assumption of one or more centres in the myelencephalon similar to that allowed for respiratory movements. He also fails to discover a cause for the train of involuntary movements named *expressive* amongst others of the first class.

7. *Irritability of Muscle*.—Dr. Todd† demurs to the views of Dr. M. Hall, which ascribes an increased irritability to the muscles of paralyzed limbs, where the lesion is in the brain, and makes a distinction between spinal and central palsy in the loss of irritability in the paralyzed muscles in the former case, and its augmentation in the latter. Dr. Todd adduces a series of trials on cases of hemiplegic paralysis by means of galvanism, in the great majority of which the palsied muscles respond less to the galvanic stimulus than the healthy muscles, while in others again they are equally excitable with the muscles of the sound limb. The author adduces proofs that the difference in the excitability of muscles in cases of paralysis is due to the different state of the nervous force in the nerves of the palsied limbs; in one class of cases it is in a minus condition, in the other in a plus condition, and in a third it is unaffected by the cerebral lesion. The author further points out that in truth the muscular irritability has nothing to do with the phenomena in question; that that power is always in direct proportion to the nutritive condition of the muscles; and that the effects of galvanism, when propagated through the nerves, is not a true test of the state of the irritability of the muscles, but rather of the excitability of the nerves themselves. Dr. Todd states that the tendency of strychnia to affect paralyzed limbs first is due to its accumulation in the blood, and an attraction towards the side of the brain where lesion exists. The irritation here produced gives rise to the usual cerebral influence upon the muscles of the opposite side of the body.

8. *Muscular Excitability*.—Dr. Harless‡ introduces some experiments of muscular irritability by remarking that the difficulty to be encountered in demonstrating that property, consists especially in our inability to detach muscle from nerve; that such separation is objectionable on account of the speedy death of the muscle, and its immediate failure of nutrition. He thought to find a means of insulating muscular from nervous force in the power which ether possesses on the latter; and his experiments, though they failed in their object, are yet interesting in other points of view. A rabbit etherized in a convenient apparatus, gave movement to irritation by galvanism, some time after simple stimulation by pricking, &c., ceased to produce any stir; this, however, yielded to further inhalation, and then a moderate current produced no movement. The animal was now killed by opening the carotid arteries, and then, though the current being applied to the nervous centres, and again to the principal trunks, muscular action did not ensue, yet when the irritation was directly given to those muscles, a vivid contraction took place. Such a circumstance is explicable on the supposition that the muscles retained the force supplied them by nervous influence previous to irritation; whilst it shows at least that etherization deprives the nerves of their conducting power; and Dr. Harless suggests that this may be due to the direct action of the ether upon the fat of nerve, "their chief constituent."

Dr. Dowler§ states that, for a considerable period after death, muscles continue to possess an irritability which answers to the stimulus of a mere blow sharply given. That this is sufficient to cause contraction so marked as to bend the arm (the brachial muscles being the subject of the experiment) even to a right angle, whence it will fall into the attitude of complete flexion. That this faculty may last even after many hours, may exist when the limbs are detached and drained of blood, and though exhaustible by repeated blows, will re-accumulate; he states that he has noticed it even ten hours after death.

9. *Contraction of Muscle*.—M. Prevost|| describes the act of contraction of a mus-

\* Archives Gén. de Méd., Oct. 1847.

† Medical Gazette, Report of Paper read at Medico-Chirurg. Society, July 23, 1847.

‡ Müller's Archives, No. 2, 1847.

§ Amer. Journal, Oct. 1846.

|| Comptes Rendus, 31 May, 1847.

cular fibril as observed by himself, and thus confirms the observations of Weber, mentioned in the last Report. He says, "when a muscular fibril contracts, the folds lie close by the approach of the particles which constitute the fibrinous cylinder; these gravitating, as it were, in a longitudinal direction, occupy a less space, and thus determine the appearance of the folds." He also gives some observations upon the influence of different fluids on the contraction of a detached muscular fibril.

FLUID.	DURATION OF CONTRACTION.
Water of temp. 25° cent.	30 to 40 min.
Water mingled with $\frac{1}{4}$ th part of a saturated solution of chlorine	A more energetic contraction for shorter time.
99 parts water mingled with 1 part of hydrocyanic acid	
99 parts water with 1 part of morphia	Energetic contraction 2 min.
99 parts water with 1 part of sulphate of strychnia	5 or 6 min.
	Very lively contraction about 3 min.

10. *Development of Muscular Fibre*.—M. Prevost\* has observed, that in the embryo of vertebrata the muscles of animal life have primarily the form of gelatinous cylinders very transparent; later, the central part of these cylinders is organized in reddish filaments; these occupy little by little all the interior of the cylinder, and the jelly which surrounds them gradually thins, and becomes a fine envelope. In vertebrata, crustacea, and insecta, the muscles of animal life differ strongly from those of organic, whilst the fibre of the heart holds a place intermediate. Muscles of voluntary movement present regular cylinders, but those of the intestines consist of packets of straight juxtaposed fibres. In mollusca, the movements of which remind us of peristaltic action, both systems present fibres like those called organic.

11. *Microscopy of Muscle*.—M. Bourguery† states, that all muscular fibres in the tongue are "flattened," riband-like, i. e. their section is ellipsoid. Diam. 0.50, 1, and 1.25 millim. broad, 0.25–0.75 millim. thick. In general the greater diameter is so placed, that in the longitudinal and transverse fibres it is vertical, in the vertical fibres antero-posterior.

### § III.—Circulation.

12. *Contractility of Arteries*.—E. and E. H. Weber‡ have succeeded in proving, by galvanic agency, the muscular nature of arteries whose calibre is small, but they obtained no satisfactory evidence, from their experiments, of contraction in larger ones. They have employed the rotating electro-galvanic apparatus, and have subjected the vessels of the mesentery of frogs to its influence. Arteries of the chosen size, i. e. 1-7th to 1-17th of a line diameter, so acted upon, did not on the instant answer to the irritation, but soon after contracted to a third of their previous diameter; if the irritation was continued, the artery progressively diminished, until the stream of blood-corpuscles was but a single row, or even became interrupted. This narrowing was limited in extent by the range of electric irritation, and produced on the stream of blood a marked acceleration, according to the law of hydraulics observed in diminished tubes. The contraction is only temporary, and the arteries recover completely their normal size and condition, being liable to renewed contraction on a fresh application of the electricity. Capillary vessels, 1-96th of a line in diameter, or thereabouts, exposed to electric stimulus, evinced no contractility, neither were they dilated, but coagulation of the blood was observed to take place. A weak electric stimulus produces, after an interval, a sensible retardation of the stream of blood, which seems to be due to the coherence of the blood-corpuscles, or adherence to the walls of the vessel, with the greater friction of their movement; and this retardation speedily ends in a total stop, whilst the newly-arriving blood-corpuscles accumulate, and fill up the vessel until collateral passages relieve the pressure. After a time the blood-corpuscles disperse once again, and the circulation is restored. A similar retardation and

\* Comptes Rendus, 31 May, 1847.

† Gaz. Méd., 27 Feb. 1847.

‡ Müller's Archiv, 1847, No. 2.



impeding of the circulation are occasioned in minute veins by electric agency, but in these it does not take place with the same facility as in the arterial capillaries, apparently because the stream is less rapid.

13. *Heart, Development of.*—MM. Prevost and Lebert\* announce the following facts: 1st. That in the chick there is a primitive transitory heart, early divided into two equal portions, as also in mammals, but in animals with a single ventricle it is undivided. 2d. That there exists a transitory bulb, divided in mammals and birds, undivided in batrachians and in fishes. 3d. The permanent heart appears first beneath the transitory left ventricle as a permanent left ventricle. 4th. The permanent right ventricle forms later beneath the transitory right ventricle; the large development of the left determines its position upon that. 5th. The transitory bulb is a part of the heart, entirely different from the permanent bulb of the aorta; this is formed later, and only after the appearance of the permanent left ventricle. 6th. There are two primitive aortæ (as M. Serres observed), but the permanent aorta is not formed by the metamorphosis of those; this appears between the two primitive, which disappear, and the descending portion of the permanent aorta results from two short vessels, which leave the branchial sinuses at the place where the primitive aortæ are detached, and blend in front at the median line. 7th. The portion of the permanent aorta which curves on leaving the bulb, joins the descending aorta beneath the junction of its roots, and not, as is believed, at the level of the third branchial arch. 8th. In the transitory bulb are formed two vessels which join to form the branchial vessel, from which the arteries of the branchial arches part.

#### § IV.—*Respiration.*

14. *Respiratory Movements.*—Mr. Hutchinson† conceives that he has established the following propositions regarding the acts of respiration:

1st. Costal breathing may be distinguished from abdominal by determining which part is first put in motion, and the kind of respiration may be designated according to the name of such part.

2d. Healthy costal breathing begins with the motion of a superior rib, which is followed by lower ones in succession.

3d. Ordinary respiration in men is abdominal, in women costal; extraordinary breathing is the same in both sexes.

4th. Any of the ribs, from the twelfth to the first, may carry on respiration.

5th. Diseased respiration is of various kinds; the movements may be symmetric or not symmetric, costal or abdominal: all or none of the ribs may move or not; the chest may dilate in all its dimensions at the same time; costal and abdominal breathing may alternate with one another; costal motion may be undulating or not, and all these may be combined in one, which the author terms "hesitating breathing;" and, lastly, the quantity of air breathed is diminished when there exists pulmonary disease.

—Mr. Sibson‡ has studied the action of the various muscles concerned in respiration, and he compares the false ribs, as they are called, in mammalia to the simple ones of the snake, assigning to them in inspiration, first, an outward movement upon their vertebral fixed point, and second, a movement towards a horizontal plane, which is an elevation. These movements are the result of the action of the levatores costarum, and of the external intercostal muscles; but although apparently productive of respiration in the reptile, conduce but little to enlarging the cavity of the chest in mammalia. Ribs of the second order are called compound by Mr. Sibson, because they consist of two pieces, a spinal and a sternal rib, each of which has a fixed point. The movements which these ribs are capable of, are elevation, and (some of them) elongation, by straightening the angle at which the two pieces join. The effect of elevation of these ribs is in some degree modified by the dorsal curve of the vertebral column, which in the upper part of the thorax causes the ribs to approach, and in a measure to overlap each other.

—Mr. Hutchinson states that the intercostal muscles can, independently of any

\* Comptes Rendus, 22 Feb., 1847.

† Phil. Mag., Sept. 1847.

‡ Phil. Trans., part iv., 1846.

other muscle, elevate or depress the ribs; and that any one lamella can, as required, independently perform inspiration or expiration at any one of the twenty-two intercostal spaces.

—The respiratory actions of the following muscles are set down according to Mr. Sibson:

The *scaleni* raise the first and second ribs, and lower and bring forward the cervical vertebræ, the effect of which is to bring the origin more directly over the insertion of the muscle, for the benefit of difficult respiration; they also expand the apex of the lung, by widening the space above the first rib, where that rests. An additional "*scalenus pleuralis*," contributes much to this. The *external intercostal* muscles of the seven superior ribs are inspiratory; below the seventh they are inspiratory only near the vertebral column, expiratory in the rest of their extent. The whole series is considered inspiratory by Mr. Hutchinson. The *internal intercostals* of the first five ribs are inspiratory towards the sternum, but expiratory in the outer part, whilst all the rest are expiratory. *Levatores costarum*, inspiratory, acting chiefly upon the lower six or seven ribs. *Serratus magnus*, chiefly expiratory, the lower fibres alone in man being considered capable of inspiratory acts, and that only in forced breathing. *Serratus posticus inferior*, expiratory. *Levator anguli scapulae*, inspiratory. *Serratus posticus superior*, inspiratory. In deep or difficult inspiration the trapezius, sterno-cleido-mastoideus, and sterno-hyoid and thyroïd aid. In difficult expiration the latissimus dorsi acts. *Recti abdominis*, *obliquus externus* and *internus* are expiratory muscles, by their depressing action on the sternum and ribs. *Triangulares sterni* and *transversales*, expiratory, by compressing the chest. The *diaphragm* in man during inspiration is first flattened, then descends equally, "and the central tendon in its descent stretches and elongates the pericardial sac, increasing the space containing the heart."

15. *Structure of Lung*.—M. Rossignol, in a very elaborate memoir\* upon the intimate structure of lung, which, in addition to his own researches, includes a review of the opinions of others, confirms the fact, now universally received, that the fine air-recesses are terminal to their own proper bronchi, and disproves the erroneous notion of ramifying air-canals anastomosing one with another. The author has made his careful observations upon portions of lung prepared in the following manner; the pulmonary artery is injected with a fluid composed of spirit of turpentine, combined with a sixth part of copal† varnish, and a quantity of porphyzied vermilion, equal to the suspensive capacity of the liquid. The injection is pushed until it return by the veins, and then the bronchial tube, and by its means the whole lung, by degrees is inflated; the lung is then slowly desiccated, and when dry cut into thin slices. Such sections presented to the author numerous large, irregular, but for the most part hexagonal, cavities, which again present in their interior lesser pits of more regular shape, whose partitions are naturally limited in height, and uninjured by the section, whilst the larger ones, on the contrary, are formed by the knife. The interior lesser cavities he names "alveoli," in allusion to their resemblance to the cells of the honeycomb; the larger, containing cavities, he calls "infundibula," because they become narrower at their orifice, which opens into one of the later ramifications of the bronchi of the lobule. M. Rossignol recognizes five orders of division of the lobular bronchus, the earlier of which possess a smooth, subtransparent lining membrane, through which may be seen, as through the pleura of the lobule, the infundibula and their contained alveoli which surround them. The inner surface of the later divisions, namely, of the last two or three, on the contrary, present to microscopic observation gaufre-like pits covering their walls, and quite distinct from the openings of alveoli, which are also to be observed of a rounded form; these recesses are called "parietal alveoli;" and their discovery is interesting, because their presence has hitherto been esteemed a distinguishing circumstance in the bronchi of birds, and that mammals were destitute of them. The following table gives measurements of alveoli and infundibula at different ages:

\* *Recherches sur la Structure du Poumon*, 1846.

† It is "de vernis de Cobalt" in the original, but obviously by mistake.

PULMONARY ALVEOLI.	Maximum in $\frac{1}{100}$ ths of millim.	Minimum in $\frac{1}{100}$ ths of millim.	Mean in $\frac{1}{100}$ ths of millim.
Fœtus 5 to 6 months . . . . .	0·05	0·02	0·03
Infants, which have either not respired or breathed for a few hours . . . . .	0·07	0·03	0·05
Infants, 18 months . . . . .	0·14	0·08	0·10
“ 3 to 4 years . . . . .	0·16	0·09	0·12
“ 5 to 6 years . . . . .	0·18	0·10	0·14
“ 10 to 15 years . . . . .	0·20	0·13	0·17
Adults, 18 to 20 years . . . . .	0·25	0·18	0·20
“ 25 to 30 years . . . . .	0·28	0·20	0·22 to 0·25
Men of mature age, 35 to 40 years . . . . .	0·30	0·25	0·30
“ “ “ 50 to 60 “ . . . . .	0·35	0·25	0·33
Old men, 70 to 80 years . . . . .	0·40	0·25	0·33 to 0·35

INFUNDIBULA.	Base.	Orifice.
Infants of 3 years . . . . .	0·25 to 0·40	0·08 to 0·14
Adults of 40 years . . . . .	0·50 to 0·85	0·30 to 0·40
Old men of 72 years . . . . .	0·60 to 1·50	0·35 to 0·70

16. *Respiration of Oxygen*.—The degree of respirability of oxygen has been the subject of many experiments by M. de Lapasse,\* who finds that when precautions were taken to remove the noxious results of expiration and transpiration, a bird would live in the pure gas at least three days; and that he himself could respire, with only occasional bronchial irritation, large quantities of the gas. This, however, is nothing more than a corroboration of the fact which we have on the authority of Allan, and Pepys, Lavoisier and Seguin.

Upon the question “*where occurs the chemical change of the blood through oxygen?*” M. Mulder† demonstrates the error of Magnus, who had asserted‡ that oxygen, simply held in solution in arterial blood, did not enter into chemical combination until it reached the systemic capillaries. Mulder shows that Magnus’s experiment to ascertain, by agitating blood with oxygen, whether it were capable of dissolving that gas, is not demonstrative proof that in respiration it does so; neither can he think that blood, whose composition is so complex, can be fairly compared to water in that same respect. Another ground on which Magnus rests his opinion is, that the blood in the lungs is not warmer than in other parts of the body, which is answered by the fact that the evaporation of water and the mixture of cold venous blood must influence it, whilst a manifest increase of temperature has been observed in the left ventricle. Davy also found a rise of temperature on mixing oxygen with blood. Mulder concludes that no reason is offered why oxygen should not commence its chemical action on the blood in the lungs.

17. *Fat collected for Respiratory Purposes in Insects*.—“Whilst pursuing other researches,” says Dr. Thomas Addison,§ “on the tracheal system of insects, it was constantly found that the ultimate coiled terminations of the tracheal vessels were inclosed most accurately in a system of flask-shaped vesicles, containing globules of brilliantly yellow-coloured fat. Mr. Newport regards the adipose tissue in insects as connected with the circulating system. Oken, Burmeister, and Treviranus annex the system of cells containing the fat to the biliary functions of the body; but there can be no doubt, from the relations and dependence of the oil-cells with regard to the tracheal system, that they should be viewed as associated, in some

\* Archives de Physiologie, p. 276, 1846.

† Archives Générales d’Anat. et Phys., Nov. 1846.

‡ Annales de Chimie et de Physique, tom. x.

§ Guy’s Hospital Reports, vol. iv. New series.



way or other, with the respiratory process; as a reserve store for consumption when the system (the solid organs of the body) would otherwise be exposed to the destructive agency of the oxidizing air."

18. *Lymphatics of the Lungs*.—Dr. Jarjavay\* gives a very elaborate account of the lymphatic vessels of the lung; he arranges them, for convenient description, into plexuses, and vessels properly so called, and these are superficial and deep. The *superficial plexuses* are spread upon the lung beneath the pleura; they present varieties in the form of the meshes, which are lozenge-shaped, or round or variously angular, in the size of the vessels, and in the moniliform character of some. These last are chiefly those in the fissures, and the swellings on them are sometimes of considerable size, whilst the alternating narrow part sometimes impedes, or wholly stops, the flow of mercury through the vessel; this character is named *varicose* by the author, and the simpler condition is distinguished as *capillary*. It is common to find the capillary vessels occupying chiefly the surface of the upper lobe, and a portion of the lower, but the varicose, without exception, in the fissures and on the median face of the lung, especially about its root. The lymphatic plexuses at the borders of the lung, consist of straighter vessels, and are, in fact, the secondary trunks, which in turn discharge themselves in two or three principal vessels: these are, for the lower lobe, two constant and a third occasional: they range the angles of the lung more or less parallel to it, and terminate in the bronchial lymphatic ganglions. The "*vessels*" of the upper and middle lobes are more numerous; they occasionally dip under the surface, because they are overlapped by a lobule, but they always reappear; they assemble to terminate in the bronchial ganglions. It is worthy of remark that the black matter so constant in the lungs, has its seat in the track of the vessels of the varicose plexuses, and thus the pattern of these is mapped out by that black substance. Occasionally, pale lines mark out sundry black spots, these indicate swellings of the lymphatics, and it has often occurred to the author to inject the vessels by plunging his pipe into one of these spots. The *deep plexuses* are said to be those of the mucous membrane of the bronchi, but the author has failed to perceive their primary union with trunks. The *deep vessels* run between the large trunks of the bronchi and those of the pulmonary artery. To the question of how the lymphatics of the lung come into connection with those of the heart, and finally with the thoracic duct, the author's injections have failed to afford a satisfactory answer: he finds, however, that, for the most part, ganglions seated about the roots of the lungs receive the vessels, although he has noticed branches go directly to the thoracic duct, and in other cases join the diaphragmatic, œsophageal, &c. &c. The ganglions about the left bronchus also receive the lymphatics of the heart, which reach them after following the curve of the aorta.

19. *Larynx*.—M. Segond† has remarked that ossification of the cartilages of the larynx commonly arises about the insertion of the muscles, and that whilst age is apparently the condition of its occurrence, an order of liability is observed—that the cricoid is first the subject of ossification, and the arytenoid are rarely affected. He suggests that this ossification must have considerable influence upon the voice, by impeding the several movements of the apparatus.

#### § V.—*Digestion.*

20. *Salivary Glands*.—Those glands commonly ranged under this head differ from one another in function, so as to divide into two orders, established by M. A. Bernard.‡ after researches undertaken to prove the origin of the diastase discovered in the saliva by Leuchs. The one division of salivary glands consists of the parotid, the buccal, and the labial glands, whose function is to secrete a simple fluid to aid in mastication; and experiment on horses shows this function to be most active when the food is of a dry nature, and least so when the reverse is the case. These glands are absent in vertebrate animals which do not masticate (fishes, for instance). The second class consists of the submaxillary, palatine, and tonsillar glands, which secrete a thicker, mucous fluid, whose use is in deglutition. These are not wanting in fishes.

\* Archives Générales de Méd., Jan. and Feb. 1847.

† Comptes Rendus, 29 June, 1847.

‡ Archives Générales de Méd., Jan. 1847.

21. *Saliva*.—The salivary secretion has, erroneously, been supposed to have the catalytic property of converting starch into sugar. M. Bernard's experiments prove that this property resides not in the fluid derived from the glands, but in the mucus of the mouth, which holds decomposing animal matter in solution, and transmits that to the saliva. Not only are the parotid and submaxillary secretions incapable of this fermentive action when separate, but also when mixed; whilst mucus taken from the mouth effects the change singly. Moreover, the catalytic process is altogether counteracted by the acid of the gastric juice.

22. *Deglutition*.—Dr. F. Wild\* has experimented upon the movements of deglutition, more especially those of the pharynx and œsophagus. His subjects have been for the most part dogs; and he has narcotized them for his purpose by injecting an alcoholic solution of opium into the external jugular vein. It was found necessary to do this, on account of the impossibility of exciting reflex movements whilst voluntary power remained; and after the loss of this, there were observed automatic movements, i. e. produced without apparent external cause. Dr. Wild considers the pharyngeal movements to be voluntary, reflex, or automatic. Irritation (by gentle rubbing with the finger) of any portion of the pharynx produced, in most cases, contractions varying in extent, but not merely local, and commonly simultaneous on both sides; this same irritation occasionally produced also partial contraction of the œsophagus, or, it may be, even complete peristaltic movement. On the contrary, irritation of this kind, applied to the œsophagus, causes only local contraction, which is more vivid in the lower (thoracic) portion than in the cervical; however, simultaneous irritation of mucous membrane and muscles in the upper portion of the œsophagus did, in some cases, produce peristaltic movement. Peristaltic movement of the œsophagus is always produced by a progressive irritant, such as the presence of a ball in the tube: and then is seen to consist in simultaneous shortening and contraction of successive portions of the œsophagus, no part being overleaped by the movement. Any interruption of the movement, such as may be caused by pressing upon one particular part, or by division of the muscles, the mucous membrane being preserved entire, causes a total extinction of it. Thus it appears that whilst the movements of the pharynx are associated, occurring as they do simultaneously on irritation wherever it is made, those of the œsophagus are not associated either amongst themselves or with those of the pharynx, for limited irritation produces only local contraction. Dr. Wild has failed to produce an antiperistaltic action in the œsophagus, although he tried, by placing a ball above the point irritated; and he observed that where vomiting occurred, the œsophagus submitted to a passive widening by the substances expelled from the stomach.

23. *Gastric Secretion*.—Dr. Robinson† has observed that the albuminous contents of the stomach of fœtal rabbits become coagulated by the gastric juice shortly after birth, and a certain duration of respiration, whilst in those which have scarcely breathed, no such change takes place in the fluid: thus proving that a high degree of oxidation is needful to the performance of the secreting function of the stomach.

24. *Intestinal Absorption*.—Oesterlen‡ finds that charcoal and Berlin blue, taken into the stomach of rabbits, &c., are partially absorbed: for the blood of the mesenteric veins may be found to contain minute atoms, of a size varying from 1-300th to 1-60th or 1-42d of a line.

—Professor Matteucci§ shows that fatty matter, in the form of an emulsion, is readily absorbed by animal membranes. He formed an emulsion of olive oil, and filled a portion of animal intestine with it. Having immersed this bag with its contents, in a weak solution of potash, he observed the emulsion become diffused through the alkaline circumambient fluid. More precise results were obtained by means of an endosmometer, filled with alkaline fluid, and immersed in the above emulsion, when a rise in the contents of the test-tube took place, to the extent of an inch, in a very brief space of time.

25. *Liver*.—The very admirable survey of the hepatic organ of secretion, by Dr. Thomas Williams,|| demonstrates very clearly that it may consist of

\* Month. Journal, Aug. 1847.

† Monthly Journal.

‡ Ibid.

§ Lancet, June 3, 1847.

|| Guy's Hospital Reports, 1846.

simple aggregations of nucleated cells, supported by a basement membrane, and that the actiniæ really possessed such a form of liver; and that even the acalcephæ are destitute of any better provision. Mr. Handfield Jones,\* in a treatise apparently similar to the above, states that in the bryozoon the hepatic organ "is clearly of a follicular type." He also holds the opinion that the cæcal appendage of the stomach of asterias shares the function of liver with the cæca of the anus. Dr. Williams had shown, however, that the former did not contain the characteristic biliary nucleated cells, and, besides, had much elastic tissue in its structure. He suggests that its function might be that of pancreas.

#### § VI.—Nutrition.

26. *Nutrition*.—Professor Paget† has elucidated, in a very striking manner, the meaning of an hypothesis of Treviranus, suggesting "that each organ, while it nourishes itself, serves the purpose of an excretion, in that it removes from the blood certain constituents, which leave that fluid in a state more fit for the nutrition of other parts." And in the same degree, it is thought probable "that the consequence of the existence of certain materials in the blood is the formation of an organ, or structure, into the composition of which those materials may enter. For example, when one kidney is destroyed the other often becomes larger, does double work, as it is said, and the patient does not suffer from retention of urine in the blood. The full meaning of which seems to be, that as the principal constituents of the urine are ready formed in the blood, and are separated through the kidneys by the agency—that is, by the development, growth, and discharge—of the renal cells, it will happen that if one kidney be destroyed, there must, for a time, be an excess of the constituents of the urine in the blood; for since the separation of urine is not mere filtration, the other kidney cannot at once, and without change of size, discharge a double quantity. The kidney therefore grows; more renal cells develop, and discharge, and renew themselves; in short, the existence of the constituents of urine in the blood induces the formation of renal substance." By combining these two hypotheses, "firstly, that the blood is definitely altered by the abstraction of every material necessary for the nutrition of a part; and, secondly, that the existence of certain materials in the blood induces, or at least favours, the formation of corresponding tissues, it seems to follow, as a reasonable hypothesis, that the order in which the several organs of the body appear in the course of development, while it is conformable with the law of imitation of the parent, and with the law of progressive ascent towards the higher state of being, is yet (at least in part, and this part more directly) the result of necessary and successive consequences. The formation of one organ, or series of organs, inducing or supplying a necessary condition for the formation of others, by the changes successively produced in the composition of the nutritive material from which they all take their nutriment. In other words, the development of each organ or system, co-operating with the self-development of the blood, prepares it for the formation of some other organ or system, till, by the successive changes thus produced and by its own development and increase, the blood is fitted for the maintenance and nutrition of the completed organism." Mr. Paget finds instances of this complementary relation of organs and tissues, in the coincident development of hair on certain parts of the body, and of the genital apparatus. Parallel to which is the perfection of plumage at the period of full activity of the reproductive organs of the bird, particularly the male. And he remarks that as in man, when the development of the genital organs is prevented, that of the beard and all the other sexual characters is, as a consequence, hindered; so in birds, when the breeding season ends, and the sexual organs pass into their periodic atrophy, the plumage assumes paler and more sober colours, characteristic of barrenness. A similar relation is well known in the development of the antlers of the deer and the reproductive organs; and Mr. Paget, in explanation of this connection with development having no apparent purpose in the generation of the species, observes, "that where two or more organs are thus manifestly connected

\* Phil. Mag., Sept. 1847. Report of Royal Society.

† Lectures delivered at Royal College of Surgeons, 1847.



in nutrition, and not connected in any external office, their connection is because one is partly formed of materials left in the blood by the formation of the other; so that each, at the same time that it performs its own proper and external office, maintains the blood in the condition most favourable to the formation of the other.<sup>77</sup> Lastly, he suggests that in this theory may be found the meaning of the commensurate development of many other organs which in their function appear unconnected; such are the thymus gland and the air-breathing organs, the thyroid gland and the brain, the spleen and pancreas, and the embryo and mammary gland of the parent.

27. *Relation of Albumen and Oil*—Dr. Hughes Bennett,\* following up the discovery of Professor Ascherson, that albumen coagulates and forms a membrane around oil with which it may be in contact, shows that the membrane so formed is of very definite structure, since the globules surrounded by it float and roll over each other without uniting, whilst their immersion in water causes them to swell out and enlarge by endosmosis. He illustrates the fact by the observation that milk requires the aid of mechanical power to destroy, as by churning, the caseous envelops of the globules, unless, indeed, acetic acid be made to dissolve the membrane, when the process is much facilitated. Dr. Bennett proceeds to say “that when it is remembered that oil and albumen pervade all organized bodies, that they are continually coming in contact, and that membranes and cells must thereby be necessarily produced; moreover, as the other soluble elements which enter into organized structures must communicate to the fluids various kinds of densities—it will be clear that all the physical conditions necessary for endosmosis and exosmosis must be present. When, in addition, it is considered that modern anatomy and physiology have demonstrated that all organized structures originally consisted of cells, composed, in like manner, of a membranous envelope, and endowed with the same physical properties, must be recognized. He considers, therefore, that the blastema containing the necessary nutritive elements in solution precipitates minute oily particles which are the elementary granules of histologists. These, either separately or united, constitute nuclei composed of oil, surrounded by an albuminous membrane. In this condition they become subject to the physical law of endosmosis and exosmosis, and absorb or exude materials, according to the circumstances in which they are placed, and the unknown vital power to which they are subjected.”

#### § VII.—*Nervous System.*

28. *Etherization*.—The phenomena of etherization have been the subject of such repeated observation and reiterated comment, that they are rendered perfectly familiar; and it seems necessary here only to allude to the experiments instituted upon the inferior animals, with the design of explaining them. MM. Flourens, Longet, Serres, &c.,† eminent as neurologists, have for the most part corroborated the testimony one of the other. Thus we find it said that, in etherized animals, sensation is absolutely suspended for a time, both in the parts of the cerebro-spinal axis, ordinarily sensitive, and in the nervous cords themselves. Experiment demonstrates this, for a dog, and in another case a fowl, having been etherized, gave no sign of sensation when undergoing the operation of exposing the spinal cord, which was done in the dorsal region; then the posterior roots of the nerves were pinched and otherwise irritated, but no cry or movement could be discerned. Motion also is, under these circumstances, nullified in the muscles of animal life; nor is it to be excited by stimulation of the motor roots of the nerves.‡

Injury of the myelonal chord itself is quite unproductive of any sign of pain, and Longet asserts the same of the medulla oblongata; but Flourens observes that signs of suffering are constantly evoked by injury of this part of the myelencephalon; in proof of this he adduces several experiments upon dogs, who having become insensible by etherization (after inhalation for thirty-five minutes, twenty-five

\* A Paper read to the Royal Society of Edinburgh.

† Comptes Rendus, 1847.

‡ This subject is elsewhere noticed more at large; vide Muscle.

&c.), and permitting the exposure of the myelon and medulla oblongata without suffering, evinced no recognition of injury, either to the spinal nerves or the chord itself, yet uttered cries, and betrayed slight twitching muscular movements upon pricking the medulla oblongata.

The degree to which insensibility is carried is well illustrated by the fact observed by Longet, that the pupil does not contract at the stimulus of light on the optic nerve, although this is a sign of life the very latest to disappear on the approach of death. It is well known that the eyeball may be touched without producing movement of the eyelids during the state of etherization; and this is associated with the observed absence of reflex movements in the pharynx, glottis, &c., which have led to fatal consequences in certain operations upon the tonsils.

Etherization consists in a gradual overpowering of nervous influence, in which may be noted a particular order and sequence of stupefaction, attributed to the successive subjugation of particular seats of intelligence. First influenced are the cerebral lobes, the seat of intelligence proper; next the cerebellum, which maintains an equilibrium of locomotive movements; third, the medulla spinalis, which M. Flourens looks upon as the principal seat of sensation and motion; but here he differs somewhat from Longet, who places etherization of the annular protuberance in this period. Finally, Flourens says that when the medulla oblongata becomes subdued, life is extinguished; for in several of the above mentioned experiments on dogs he continued the ether administration for a great length of time (one hour or more), and noticed up to the last instant indications of sensation, produced by pricking the medulla oblongata. The effects of the inhalation of ethereal vapour then correspond, so far as they go, with the experiments of removing portions of the brain; and this suggests to Longet the reflection that it is possible to isolate general sensibility and intelligence. It is, however, to be said that the phenomena of etherization do not seem always to appear after this order in man; that inexplicable cases occur where consciousness, reasoning power, remains after the complete quelling of the perception of pain, when the region which is commonly most susceptible appears the least so. Those cases in which movements, recognized as arising from suffering, occur without knowledge of the patient, are explained by supposing that imperfect etherization, embracing intelligence and sensation in part only, allows pain really to be felt, but that memory fails to retain the circumstance.

M. Longet says, that in etherization the ganglionic system appears to be super-excited, and to become in a manner the diverticulum of the nervous force, which temporarily abandons the cerebro-spinal system. Opposed to this, however, we have M. Mandl's experiment, showing that the peristaltic action of the intestine ceased, but the mesenteric arteries pulsated. Doubt, however, lies on this, for the motive tracts of the myelon were not wholly etherized.

The stupor developed by ether may, as Dr. Simpson\* has shown, and as Dr. Protheroe Smith† confirms, be continued for many hours by repeated inhalation, but it may not safely be carried beyond a certain stage; thus Longet observes that etherization, pushed beyond insensibility, causes death in rabbits in about six to twelve minutes, and Flourens killed dogs by trying how long the medulla oblongata would continue to be sensitive, the inhalation being persisted in. Longet ascribes death to a species of asphyxia, taking its rise in the respiratory nervous centre; Flourens does not call the death asphyxia, but ascribes it to the same cause as Longet apparently; he holds the difference to be this, that asphyxia is a negative death from want of oxygen, whilst the last result of ether inhalation is a positive death, proceeding from direct influence of the vapour.

M. Series gives the results of experiments upon the influence which fluid ether has directly upon the nerves: if one of two nerves which have been laid bare be immersed in ether, it will in a few minutes become totally insensible to injury below the point of immersion, whilst the other one, similarly exposed, but not acted on by ether, will preserve its natural sensation. Longet says that this etherized nerve will still be in some measure subject to the will, and also will transmit an electric current; but it appears that this error arises from the incomplete penetration of the ether, whereby the centre of the nerve is still healthy,

\* Monthly Journal.

† Observations on the Use of Ether.

though the outer part be injured. That the nerve really sustains injury is apparent from the fact, that when the sciatic nerve of a rabbit was exposed, and its sensibility destroyed by ether, the wound was allowed to heal, and six days after the tibial nerve was insensible to injury. Besides, MM. Pappenheim and Good describe the effects observed by them to take place in neural substance under the influence of ether: the sheath of the nerve was seen to detach itself from its contents, and a coagulation to occur in the latter, which speedily assumed a grumous appearance. These gentlemen observed that the penetration was gradual, and that even the outer part may be defended by the proximity of surrounding tissues.

The influence of strychnia on the nervous system, and very markedly on the reflex function, is the opposite of that of ether: they are said to counteract one another, but strychnia applied to a nerve which has been subject to the direct action of ether, does not effect its restoration.

29. *Influence of Strychnine on the Nervous System.*—Professor Meyer\* and Dr. Marshall Hall† have repeated many well-known experiments relating to the influence of strychnia in producing spasmodic contraction of the muscles. Their subjects have been frogs, and the former physiologist has shown, by removing in different individuals a portion or the whole of the brain, that, on the administration of strychnia, tetanus still affects those parts of the body which continue in connection with a nervous centre. Further, tetanus is not produced if the posterior roots\* of the nerves be divided previously, from which it is concluded that the tetanic state is the product of a reflex act; and in proof of this Dr. Hall shows, that though a frog lies quiet after the first spasm, a breath, a touch, or a shock of the table, suffices to reproduce it with violence. He also says, however, that the first spasm appears to be the result of a voluntary movement, which, stimulated by the will, is yet out of its control when once in action, and that the animal appears thenceforth judiciously to refrain from any such perilous exercise of its volition.

Professor Meyer seeks to trace the reflex function to the spinal cord, and to ascertain what portion of that is essential to its development; he has, therefore, exposed the myelon, and removed with scissors the gray matter of the cord as far as the origin of the nerves of the posterior extremities, and then administered strychnia without producing tetanus beyond the posterior limbs. It is quite fair, however, to doubt a result drawn from an experiment so very difficult to perform, and it is, therefore, by no means proved that the gray matter of the cord is the more immediate agent in the reflex function.

Dr. Hall points out the difference in character between tetanus produced by strychnia (which, in his experiments, was absorbed by the cutaneous surface), and that consequent on the passage of an electric current through a nerve; the latter is constant whilst the irritation lasts, but the former is intermittent, only reproduced by external causes. He takes occasion from this to observe, that the two are types of two different forms of tetanus when observed as a disease; the one, the "electrogenic" state, resembles disease which directly excites the medulla spinalis, such, for instance, as exostoses in the spinal canal; whilst the other correspond to states of the myelon where that is not *excited* but only *excitable*; such are traumatic tetanus, hydrophobia, &c., where the actions are reflex, not direct.

30. *Optic Thalami.*—In a series of experiments upon rabbits, made after the publication of his essay "*De vi motoria baseos encephali*," Dr. Schiff‡ observed the following consequences of injury to the optic thalami, &c. 1st. The lower parts of the optic thalami, and the whole thickness of the crura cerebri, are slightly sensitive. 2d. If one thalamus or one crus cerebri be destroyed, a rotation around the transverse axis of the body takes place. This movement is not due to a hemiplegia of the opposite side, for it takes place even when the action of one of the extremities of the injured side is prevented. 3d. The injury of any part of the hemisphere above the thalamus produces no such ruling movement. 4th. The change from the rotatory movement to the rolling movement is observed only

\* Monthly Journal, Aug., 1847.

† Comptes Rendus, 14 June, 1847.

‡ Schmidt's Jahrbücher, No. 6, 1847.



when, in consequence of the operation, the lateral part of the pons is compressed. 5th. The rotatory movement depends on a deviation of the two forefeet towards the side opposite to the direction of the rotation, combined with a movement of the neck *towards* the direction of rotation. 6th. These deviations occur only in movements effected through the brain; they are never spasmodic. 7th. The anterior three-fourths of each thalamus unite in themselves the elements for the flexion of the body to the opposite side. When the portion of the thalamus included within this anterior portion is destroyed, the rotatory movement towards the injured side ensues in the way described above. 8th. But if the posterior fourth of a thalamus, or if a crus cerebri be destroyed, the deviation of the feet and of the neck will have the opposite direction, and the movement will be towards the side opposite the injured thalamus, in just the same manner as when the anterior part of the other thalamus is injured. 9th. There appears, therefore, to be a decussation of the fibres in relation with these movements, between the thalamus and the crus cerebri, which decussation probably takes place in a part lying above and behind the corpora albicantia, and reckoned as belonging to the substantia perforata media. 10th. The destruction of no azygos part of the brain above or before this portion of the middle line produces any paralysis of the extremities; but the median division of the floor of the fourth ventricle produces excitement of motion. 11th. If, in dividing the crus cerebri, the pons be injured, a partial paralysis of the hind foot, on the side opposite the injury, is added to the other deviations; and the movement takes the form of a rotation around the paralyzed foot, the whole body moving as the radius. 12th. Immediately after the destruction of an optic thalamus, or a crus cerebri, a few rotations are made *towards* the injured side—the effect, probably, of the irritation—they soon give place to the ruling movement. 13th. The part, irritation of which makes rabbits snarl and dogs howl, is anterior to the thalamus, in the neighbourhood of the anterior crura of the fornix. 14th. The rotation takes place in animals blinded by the removal of the humours of the eyes.

31. *Function of Nerve*.—E. H. Weber,\* after a series of experiments, having reference to the influence of cold and heat upon the function of nerves, comes to the following conclusions: When the ends of the nerves of the tongue are exposed to warmth equal to 40° R., or to cold approaching 0° R. (which he effected by dipping the tongue into warm or cold water), the power of these nerves to convey perception of taste became lost after a short time, so that the sweetness of sugar was unperceived. At the same time the power to distinguish between warmth and cold is lost, and different degrees of pressure are not discerned. The action of cold upon the trunk of the ulnar gives rise to a smarting sensation, quite different from the perception of cold. The ultimate ramifications of the nerves are, by such influence, either altogether deprived of the power to discern heat and cold, or stunned in a manner similar to that of pressure upon the trunk of a nerve, whereby the so called asleep condition is caused in those parts of the limb below the seat of pressure.

If the cavity of the nares be filled with water, which has an agreeable temperature, the sense of smell is presently lost. Weber says that the mechanism of the soft palate enables one to keep fluids from flowing down the throat when the nares are filled with it. The nasal passages filled with *l'eau de Cologne* afford no perception of the perfume: and when filled with sugar-water no taste is perceived, though the upper part of the pharynx and the soft palate are in contact with the liquid.

32. *Structure of Ganglion*.—M. Wagnert† has observed that really to exist, which Todd and Bowman, in their physiology, have suggested as possible, namely, that nervous fibrille take their rise immediately from the ganglion corpuscles. In a communication to the Académie des Sciences, he says that each elementary fibre of the myelencephalic nerves which enters a ganglion, passes into a corpuscle, in which may be seen also its nucleus and nucleolus. From each ganglion-globule there rises another nervous fibre, which is prolonged into the peripheric branch; the branches which are thus seen to arise appear as the “*soi-disant*” sympathetic

\* Müller's Archives, No. 4, 1847.

† Comptes Rendus, 10 May, 1847.

fibres, but gradually enlarge, and assume the ordinary aspect. His observations have been most successful in cartilaginous fishes: *raia*, for example.

33. *Nerves of the Heart*.—Dr. Robert Lee\* has succeeded in dissecting nerves and ganglia in the muscular substance of the heart, and comes to the following conclusions respecting them: 1st. That the muscular and vascular structures of the auricles and ventricles of the heart are endowed with numerous ganglia and plexuses of nerves. 2d. That the nervous structures of the heart, which are distributed over its surface, and throughout its walls to the lining membrane and columnæ carneæ, enlarge with the natural growth of the heart, before birth, during childhood and youth, until the heart has attained its full size in the adult. 3d. That the ganglia and nerves of the heart enlarge, like those of the gravid uterus, when the walls of the ventricles and auricles are affected with hypertrophy. 4th. That the ganglia and nerves which supply the left auricle and ventricle in the normal state are more than double the size of the ganglia and nerves distributed to the right side of the heart.

34. *Nerves of Bone*.—M. Gros† has obtained some interesting particulars regarding the distribution of nerves to the long bones. Taking the femur of the horse as sufficiently typical of the ordinary plan, he finds at least three nerves to approach the nutrient foramen, two of them in company with the branch of the femoral artery, called by M. Gros “diaphysial,” and the third, occasionally double, by piercing the vastus internus muscle; all of these are branches of the crural nerve, but there is in man, it seems, a branch of the sciatic in addition. Arrived at the nutrient foramen, the nerves are disposed differently in some subjects, but commonly a ganglion is developed, which receives the nervous branch which came through the muscle at one end, and one of the satellites of the artery at an interval. One portion of the ganglion is somewhat distinct, and is situated within the foramen: it gives two branches which receive the other arterial satellite (which is distinct from the ganglion), and then penetrate the medullary canal. The rest of the ganglion lies beneath the periosteal artery, which, it is to be noted, is a branch of the diaphysial, whose other branch is medullary, and supplies two satellite nerves to it. Variety occurs in the ganglion as to situation, it being near to or more remote from the foramen, and as to form, it being occasionally double. The branches, both medullary and periosteal, follow, and ramify with the arteries, forming a network correspondent to the vascular, and the purpose of the ganglia appears to be to assemble, previous to this distribution, the nerves from several sources.

35. *Nerve—Contractile Movements*.—M. Mandl‡ having removed two or three ganglia with their connecting nervous cords from an insect, and placed them in a drop of water under the microscope, perceived distinct contractile movements of the nervous cords, or of the filaments which part from the ganglions. This observation is confirmed by M. I. Geoffroy St. Hilaire and by M. Serres. The movements are characterized as arching and vermicular.

36. *Descendens Noni*.—Dr. Parkman§ has observed a case where the descendens noni nerve was formed by combined branches of the cervical nerves, and a filament from the pneumogastric without any communication with the hypoglossal; it was similar on both sides.

37. *Movements of the Iris*.—In an amaurotic person, who was also paralytic for many years, the iris was observed by Dr. Scuhrrl to recover its mobility, contemporaneously with the restored muscular power which resulted from a continued antiphlogistic regimen. The sight was not restored, and impressions of light did not affect the iris; neither was movement provoked in it by any irritation of the conjunctiva, puncta lachrymalia, or mucous membrane of the nose. It was at the time of movement of the eyeball that the pupil, usually dilated, was observed to change its diameter, and to be especially influenced by action of the muscles of the eyelids. The author, from his experiments, comes to the following conclusions:—1st. Innervation of the levator palpebræ superior provokes movement of

\* Med. Times.

† Archives Générales de Méd., Jan. 1847, p. 135.

‡ Archiv. d'Anat. et Phys. Générales, Nov. 1847.

§ Archiv. für Physiologische Heilkunde.

§ Amer. Journal, April 1846.

the circular fibres near the papillar margin of the iris. 2d. Innervation of the orbicularis palpebræ provokes movement of the longitudinal fibres of the iris proceeding from the ciliary border. 3d. Contraction of the recti and obliqui-oculi provokes movement of both sets of fibres of the iris, feeble and undefined however; this observation is obscured by the interference of palpebral movement.

38. *Muscle of the Choroid*.—Brücke\* has recognized a muscular character in the gray ring which surrounds the anterior part of the choroid on its outer surface, and is known in man and mammals generally as "orbiculus ciliaris;" its structure resembles that of the iris, in whose immediate neighbourhood it exists, and it is found also in birds and scaly reptiles. Brücke names it "Spannmuskel der Chorioidea."

### § VIII.—Of the Embryo.

39. *Division of the Yolk*.—M. Coste† has communicated to the Académie des Sciences the result of some observations relative to segmentation of the vitellus; a phenomenon which he has noticed in birds, scaly reptiles, and cartilaginous fishes, thus proving the distinction of animals presenting this phenomenon from others, in which the blastoderma is not so produced, to be erroneous. The author observes this difference, that whilst, in the former class, the segmentation happens to the entire vitellus, it is limited in the latter to the part which constitutes the cicatriculus.

40. *Membrana Decidua*.—The construction of the human decidua bearing in many points a resemblance to that in the dog, yet differs from it in this, that the villi of the chorion do not enter the "tubular uterine glands," as they have been clearly observed to do in both the dog and cat. Two circumstances oppose this mode of growth, and the resulting manner of relation between the maternal and fœtal blood: first, the narrowness of the follicles; next, the compound branched condition of the villi opposed to the simple tubular character of the follicles. It is found by Professor Weber, to whom the above observation is due,‡ that the follicular glands of the uterus are pretty uniformly distributed and developed in the first period of conception over the fundus and body of the uterus. M. Hipp. Blot§ has traced the deciduous membrane upon the neck of the uterus, in direct continuation with the mucous lining at that part, and states that the mouth of the sac thus left open is stopped by the mucous plug; this fact is confirmatory of an observation which he had previously made upon ova of four months, in which he noticed the orifices of the Fallopian tubes, in addition to that of the neck of the uterus.

41. *Contents of the Fœtal Stomach*.—Dr. Robinson|| has reported some interesting observations upon fœtal rabbits, &c., made with the view of determining the source of the contents of their stomachs. The peculiar nature of this fluid matter is thus described by the author: "During the last ten days of its uterine existence, the stomach of the fœtal rabbit is invariably distended with a semi-transparent fluid, of a dark green colour, extremely viscid, and coagulating by heat into a solid opaque mass. Viewed microscopically, it is found to consist of a clear liquid, suspended in which are numerous cells of different shapes, and several large globules of oil. The stomach, in such cases, presented but little vascularity, whilst the small intestines were plentifully supplied with blood-vessels. The chymous substance which the latter contained was evidently derived from the stomach, becoming, however, more opaque as it assumed the situation of the meconium. This substance, of a bright green colour, became, on the addition of a few drops of nitric acid, bright scarlet. At an earlier period, however, the contents are perfectly transparent, present no microscopical objects, are not at all viscid, and undergo no change by the application of heat or nitric acid; at the same time the intestines are void of meconium. The liquor amnii of these animals is a transparent almost colourless fluid, exhibiting scarcely any indication of the presence of albumen, and Dr. Robinson observed the fœtus swallowing this fluid.

\* Jahresbericht der gesamenen Medicin im Jahr., 1846, 1st Band.

† Comptes Rendus, 5 April, 1847.

§ Gaz. Méd., Oct. 9 and 16, 1847.

‡ Müller's Archives, 1846, pp. 425-8.

|| Month. Journ. of Med. Science, 1847.



He is of opinion that the fluid thus received into the stomach gains a nutritious material by the secretions of the salivary glands.

### § IX.—Organs of Generation.

42. *Uterus*.—Weber\* has gained confirmation of his belief that the uterus as well as the mamma has its rudiment in the male. This rudiment he finds in the "vesicula prostatica," which is concealed in the "colliculus seminalis" of the prostate, and he recognizes it in man, in the beaver, in the horse, dog, cat, hog and rabbit. In the recently born rabbit he finds a very close resemblance in the male and female organization of that part, and he cites Ackermann's description of an hermaphrodite infant, in whom an uterus occupied the place of the vesicula prostatica, and ejaculatory ducts opened at its mouth, as if it were the caput gallinaginis.

43. *Vesicula Seminalis*.—*Finis glandulosus Vasus Deferentis*.—Weber† finds a very small quantity of spermatozoa in the vesicula, compared with the quantity in the vas deferens; the glandular end of this he finds largest in the stallion. He assigns both to it and to the vesicula a secretory function.

### § X.—Mammary Gland.

44. The mamma, according to M. Deschamps (de Melun‡) presents in the higher mammalia (man, rumana, carnivora and rodentia), teats perforated by numerous milk tubes (15 to 20 in woman, 10 in the dog, 7 or 8 in the cat), each of which is the aperture of a small dilatation of a lactiferous duct. In solipedes, and perhaps also in pachydermata, the apertures are much less numerous (in the ass 3, in the mare only 2), and open two or three large ducts, which themselves receive the lactiferous tubes, and intercommunicate. Ruminants have one large cavity, or "reservoir du lait," belonging to each teat, which has likewise but one aperture; the reservoir is entered by the lactiferous tubes, whose orifices are closed by valvular folds of mucous membrane, whilst the free escape of the milk is prevented by similar folds in the aperture or tube of the teat, and by constriction of elastic tissue in the neck of that. Lastly, in marsupials, monotremes, and cetaceans, although there are numerous cavities, there is but one orifice, and the contents of the reservoirs is subject to expulsion by a special compressing muscle. Monotremes and cetaceans are destitute of a nipple, and marsupials nourish their young from the breast, before those are capable of suction.

The mucous membrane of the primary lactiferous tubes is simple, of the cavities of reserve, thicker, and mixed with elastic tissue; it is also folded so that, in ruminants, the cavity is multilocular; in the tubes of the teat there is elastic tissue, and at the orifice cuticular epithelium.

### § XI.—Skin and its Appendages.

45. *Hair*.—Professor Paget§ gives the following very interesting account of the development and death of hair, in illustration of the process of nutrition:—"An eyelash which naturally falls, or which can be drawn out without pain, is one that has lived its natural time, and has died and been separated from the living parts. In its bulb, such an one will be found very different from any that are still living, in any period of their age. In the early period of the growth of a dark eyelash, we find its outer end almost uniformly dark, marked only with darker short linear streaks, and exhibiting no distinction of cortical and medullary substance. Not far from its end, however, this distinction is plainly marked; dark as the cortical part may be, the medullary appears like an interior cylinder of much darker granular substance: and in a young hair, this condition is continued down to its deepest part, where it enlarges to form the bulb. Now this enlargement, which is of nearly cup-like form, appears to depend upon the accumulation of nucleated cells, whose nuclei, according to their position, either by narrowing and elonga-

\* Müller's Archives, 1846. † Ibid. ‡ Gaz. Méd. de Paris, 1 May, 1847.

§ Lectures delivered at the Royal College of Surgeons, 1847; vide Med. Gazette.

tion, are to form the fibrous substance of the outer part of the growing and further protruding shaft, or are to be transformed into the granular matter of the medullary portion. At this time of most active growth, all the cells and nuclei contain abundant pigment-matter, and the whole bulb looks nearly black. The sources of the material out of which the cells form themselves, are at least two; the inner surface of the sheath, or capsule, which dips into the skin, enveloping the hair, and the surface of a vascular pulp, which fits in a conical cavity in the bottom of the hair-bulb.

"Such is the state of parts so long as the growing hair is all dark. But as it approaches the end of its existence, it seems to give token of its advanced age by becoming gray. Instead of the almost sudden enlargement at its bulb, the hair only swells a little, and then tapers nearly to a point; the conical cavity in its base is contracted and hardly demonstrable, and the cells produced on the inner surface of the capsule contain no particle of pigment. Still, for some time it continues to live and to grow, and we find that the vigour of the pulp lasts rather longer than that of the sheath or capsule, for it continues to produce pigment-matter for the medullary substance for some time after the cortical substance has been entirely white. Thus we can trace the column of dark medullary substance growing paler and more slender, and, perhaps, interrupted, down to the point of the conical pulp, which, though smaller, is still distinct, because of the pigment-cells covering its surface. At length the pulp can no longer be discerned, and uncoloured cells alone are produced, and maintain the latest growth of the hair. With these it appears to grow yet some further distance, for we see traces of the elongation of their nuclei into fibres, in lines running from the inner surface of the capsule inwards, and along the surface of the hair; and we can always observe that the column of dark medullary substance ceases at some distance above the lower end of the contracted hair-bulb. The end of all is the complete closure of the conical cavity in which the hair-pulp was lodged, the cessation of the production of new cells from the inner surface of the capsule, and the consequent detachment of the hair as a dead part, which now falls by the first accident—falls, sometimes, quite bare and smooth on the whole surface of its white bulb, but sometimes brings with it a layer of cells detached from the inner surface of the capsule. When its growth is failing, however, there is perceptible, just below the base of the old hair, a dark spot, the germ or young pulp of a new one, covered with cells containing pigment, and often connected by a series of pigment-cells with the old pulp or capsule; and this appears to be the product or offshoot of some portion of the capsule of the old hair; for though it may sometimes appear only in the form of a conical pulp, yet more often, I think, it shows signs of connection with the capsule, and the cone is only more evident than the rest because of its covering of dark cells."

46. *Skin*.—The black colour of the skin of negroes is principally due, according to M. Krause,\* to the nuclei of cells, and not to pigmental cells. The appearance of cells of pigment is owing to agglomerations of small nucleated cells which are easily detached; not only the nuclei of the cells are coloured, but themselves also are brown, though not with pigment. Very few pigment-cells are to be found in the more superficial part of the epidermis.

47. *Skin—Sudoriparous Glands*.—M. Krause† has made an approximative estimate of the number of the sudoriferous glands in the human skin. He finds, in the skin of the forehead, 1258 glands in the square inch, in the palm 2736 in the same space, in the sole of the foot 2685, and in the back of the neck and the back 417.

## § XII. *Histology*.

48. *Histology*.—M. Wertheim's‡ re-searches into the physical conditions of the tissues of the human body, conducted upon recent subjects whose ages ranged between 1 year and 74 years, lead him to the following conclusions: 1. The specific gravity of tendons, muscles, and veins diminishes with age; that of

\* Handwörterbuch der Physiologie, von Wagner.

† Ibid.

‡ Comptes Rendus, 20 Feb. 1846.

arteries increases by reason of calcareous or other deposit in their walls; that of bones and nerves yields no fixed result in respect of age; but the specific gravity of bones is found to be greater in man than in woman. 2. Osseous tissue elongates in direct proportion to the force it is subject to, just as inorganic matter and wood do; this is not the case with soft parts in their natural state of humidity. 3. When the elastic and permanent elongations become very great, as occurs with vessels, the elastic elongations increase in a much smaller ratio, in consequence, it seems, of the extent of the secondary elongations that it is necessary to add to the primary ones in accordance with the general law. 4. Taking, for the coefficient elasticity of the soft parts, the definition generally adopted for metals, the value of each example is determinable by the resolution of an equation of the second degree. 5. The coefficients of the elasticity of bone, of tendon, and of nerves, appear to augment with age, whilst that of muscle diminishes considerably. 6. The several tissues arranged according to their coefficients of elasticity, or according to their cohesion, yield the following series in each case: bone, tendon, nerve, muscle, ven. artery. 7. The cohesion of muscle diminishes with age. 8. The trunks of nerves have a feebler cohesion than their proximal branches, and these an inferior cohesion to that of cutaneous nerves. So that cohesion appears to augment as diameter decreases. 9. By desiccation the cohesion of all parts is increased.

49. *Ligamentum Nuchæ*.—Mr. Harrison\* has made the very interesting observation that the elastic tissue of the neck in the elephant is connected to the bone of the skull by intermediate tendon, which takes its rise from the ligament as from a muscle. Acetic acid demonstrates the difference of tissue, making the tendon a hyaline pulp, but affecting the yellow fibres very little.

\* Dub. Med. Press, March 17, 1847.



## V.

# REPORT ON THE PROGRESS OF MATERIA MEDICA AND PHARMACY.

BY GEORGE EDWARD DAY, M. A., L. M. CANTAB.

Licentiate of Royal College of Physicians, Physician to the Western General Dispensary,  
and late Lecturer on Materia Medica at the Middlesex Hospital Medical School.

1. *On the most Economical Mode of Extracting Iodine from weak Solutions.*—Our readers may recollect that several processes having this object in view were given in our last Report (see Vol. IV. p. 315). None of them were, however, satisfactory. Persoz has been recently applied to for an improved method; and, as iodine is so extensively used in medicine, and its price is increasing, a great point would be gained if we could ascertain the most economic mode of separating it from water containing it naturally, from iodine baths, and, as Persoz also suggests, from the urine of patients who take it internally. Soubeiran proposed to precipitate it by sulphate of copper, to which a certain quantity of iron filings was added, with a view to reduce the periodide of copper to the state of protiodide. Subsequently the protosulphate of iron was substituted for the iron filings.

The irregularity of the results obtained by both these processes must have struck every one who has tried them; it is, therefore, not surprising that a more certain method has been proposed as a substitute. MM. Labiche and Chantrel\* have described one which is based upon the insolubility of the iodide of starch, but which in practice presents a difficulty which these gentlemen seem to have overlooked. It is this: iodine combines with starch only when it is in a free state; it is, consequently, requisite to liberate it from its combinations by means of chlorine, and this presents an insurmountable difficulty.

Having been called upon to examine this question, Persoz found, in the first place, that the protacetate of iron, substituted for the protosulphate, produces a more rapid reduction; but as it is impossible to reckon upon a regular precipitation of the protiodide of copper, owing to the influence which the respective proportions of the solutions employed exert, he had recourse to sulphurous acid, a powerful reducing agent, and whose action upon the oxide of copper, which it reduces partially to the state of suboxide, was pointed out by M. Chevreul. A few words will suffice to render this kind of reaction intelligible. If 1 gramme† of sulphate of copper be dissolved in 150 centigrammes of water, and to this solution 1 grm. of sulphate of soda be added, the liquid acquires a green colour, and becomes turbid. As the formation of a precipitate should be avoided, and at the same time the liquor decolorized, the requisite quantity of sulphurous acid to obtain this double result is added; on letting fall a drop of a solution of iodide of potassium into it, it immediately becomes opalescent, the turbidity goes on increasing, and in the course of an hour a white slightly-pinkish precipitate of the subiodide of copper is formed, which is readily collected by boiling the liquid for a few minutes, and then decanting.

Accordingly, in treating ioduretted waters, sulphurous gas should be passed into them until they exhale a faint odour, in order to convert all the iodine which may exist in the state of iodate into ioduretted hydrogen; then to prevent the formation of the precipitate from the mutual action of the sulphite of soda and the sulphate of copper; and lastly, to cause the reduction of the oxide of copper. For this purpose, therefore, there are successively dissolved in the liquid under treatment 1

\* See my last Report, p. 373.

† The gramme equals 15·4 grains nearly.

part of sulphate of copper and 1 part of bisulphate of soda, calculating approximately the amount of the first for the quantity of iodine supposed in solution, upon the fact that about 3 parts of the sulphate of copper are required for 1 part of the iodide of potassium or sodium. The liquid is then left to itself or boiled, according to whether the precipitate is desired immediately or after a few hours. On letting the precipitate form in conical vessels, it is easy to collect it into a small volume: in every case it is brought upon a filter, washed, dried, and the iodine extracted by one of the known processes. Calcining the protiodide of copper, previously mixed with 2 equivs. of peroxide of manganese, may be successfully employed. The reaction above described, is so readily produced, that Persoz expresses no doubt that in future all ioduretted waters, even the weakest, will be treated by this process; and that it will likewise be successfully employed for the analysis of mineral waters containing bromine and iodine.\*

2. *Syrup of Iodide of Iron.*—The Messrs. Smith of Edinburgh strongly recommend the following mode of preparing this medicine:

Let a solution of iodide of iron be made in a flask with six hundred grains of iodine, two hundred grains of pure iron filings, and six ounces of cold water. The action being finished, after smart agitation for a few minutes, let the liquid, while yet hot from the intense chemical action, be boiled over a gas flame or in any other more convenient way till its brown colour has disappeared, which is easily known by the froth becoming white. Let the liquid be now at once filtered through a small filter into a bottle, which has previously been marked, by pasting on its outside a small slip of paper at the level of eighteen fluid ounces, and containing thirteen ounces and a half of refined sugar, broken down into pieces about the size of peas. When the solution has all passed through, which fortunately takes place with unusual rapidity, let the filter be washed with boiling water, a further quantity of which must also be poured into the bottle till the liquid reaches the level of the mark. Let the bottle then be introduced into a hot water-bath and briskly shaken at short intervals, till the sugar is quite dissolved; and having adjusted the level of the syrup to the mark by the addition of water; after again shaking the bottle, let the syrup, without a moment's delay, be bottled into small phials, and secured as much as possible from contact with the air and light, by careful corking, and covering the bottles with some dark-coloured paper. These are the proportions adopted in the Edinburgh Pharmacopœia, and the syrup contains one grain of the iodide in twelve minims, or five grains in one drachm; but as the syrup first proposed by Dr. A. T. Thomson is weaker by two-fifths, containing three grains to the drachm, and which is the strength of the syrup used in England, it is evident that the proportions must be varied accordingly. They will therefore stand thus:—

250 grains iodine  
100 grains iron filings  
2½ oz. cold water  
10 oz. pure sugar.

Let the syrup, when finished, measure twelve ounces and a half, the level occupied by this quantity having been marked off on the bottle beforehand. It is advisable that the bottle used in the preparation of the syrup should not have a capacity more than about a third above the quantity to be made.†

3. *Iodide of Lead.*—It has been long known that when iodide of lead is formed by precipitation of acetate of lead by iodide of potassium, a certain quantity of iodide of lead always remains in solution; in fact, there is about 10 per cent. less iodide of lead than theoretically there ought to be. This is owing to the formation of a double compound, an iodide of lead and potassium remaining in solution. This portion remaining in solution may be thrown down by the addition of a few drops of nitric acid. But the better plan is to prepare it as Boudet advises, by precipitating iodide of potassium with nitrate of lead.‡

4. *Sulphate of Magnesia* has been carefully studied by M. Ladimir Combes, § especially in relation to the best mode of concealing its bitter taste. After a number of trials, he at last succeeded in effecting this by the simultaneous administra-

\* Journal de Pharmacie, Août 1847.

† Pharmaceutical Journal, Feb. 1847.

‡ Journal de Pharm., Avril 1847.

§ Ibid., Août 1847.

tion of tannine or coffee; the former, however, is the active agent.  $1\frac{1}{2}$  gr. of tannine, when boiled for three minutes with an ounce of the sulphate and about  $1\frac{1}{2}$  pint of water, entirely conceals the taste of the salt. The peculiar astringent taste of the tannine may be removed by the addition of an agreeable aromatic. In roasted coffee we have both the advantages combined. The following are the best proportions:—Take of

Water, about 16 oz.

Powder of roasted coffee,  $2\frac{1}{2}$  drms.

Sulphate of magnesia, 1 oz.

Boil well for two minutes (not in a tinned vessel), remove from the fire, and let the mixture infuse for some minutes, so as to allow time for the development of the aroma; then filter, or merely strain off. It must be sweetened to taste. This fluid does not impart the slightest taste of the bitterness of the sulphate. The salt does not undergo any decomposition by this process.

It should be observed that the infusion is not capable of removing the bitterness, nor will the addition of the salt to the filtered decoction answer the purpose.

Should it be required to increase the amount of the sulphate without augmenting the proportion of coffee, two or three grains of tannine should be added to the boiling decoction. The aroma of the coffee masks the disagreeable taste of the tannine. Orange-flower water is also useful in concealing the flavour of tannine.

5. *Citrate of Magnesia*.—This salt has been made the object of a careful investigation by M. Roger Delabarre, who has also given formulæ for purgative waters made with it. The following extracts are taken from a translation of his memoir\* in the "Pharmaceutical Journal:"—

"On making some experiments with the salts of magnesia, I had occasion to observe that the citrate of magnesia is devoid of the bitter and disagreeable taste which characterize the other soluble salts of this base.

"This result, which at first surprised me, appeared less extraordinary, on considering that of all the soluble salts of iron, the citrate is almost the only one which is free from the particular taste that distinguishes the ferruginous salts.

"Experiments founded on these observations led to the conclusion that these facts, so far from being exceptions, may be taken as illustrations of a law which may be thus generalized:—That, of all the salts of any base, the citrate is that in which the taste peculiar to the base is to the greatest extent lost.

"The citrate of magnesia, which forms the subject of this notice, is a salt but little known, being scarcely mentioned by chemists. Liebig, in his *Traité de Chimie Organique*, merely says, 'Magnesia, alumina, and protoxide of manganese form, with citric acid, neutral insoluble salts, which are acid.'

"It may be obtained in two different ways. It may be made by double decomposition from sulphate of magnesia and citrate of soda, or by saturating a solution of citric acid with magnesia or the base carbonate. If it be prepared by saturating a solution, somewhat concentrated, of the acid, the liquor, which is at first liquid and transparent, becomes in an instant a hard mass, adhering strongly to the sides of the vessel in which the combination is affected. This arises, probably, from the water, which at first holds the salt in solution, passing to the state of water of hydration.

"The neutral citrate of magnesia, prepared by either of the processes above described, is a white, pulverulent, insipid salt, soft to the touch, heavier than magnesia, and soluble in water, aided by the addition of a slight excess of the acid. This solution has a slightly acid taste, but is in no way disagreeable.

"Citrate of magnesia may be considered as having the following composition:

1 eq. citric acid . . . . .	2511·25	. . .	55·3
3 eq. magnesia . . . . .	774·00	. . .	17·2
1 eq. water of constitution . . . . .	112·50	. . .	2·5
10 eq. water of crystallization . . . . .	1125·00	. . .	25·0
	<hr/>		
	4522·75		100·0

"There is the same quantity of oxygen in the water present as in the acid.

\* The original paper occurs in the *Journ. de Pharm.*, Juin 1847.



"I propose the following preparation for the administration of citrate of magnesia :—

## SEIDLITZ WATER FREE FROM BITTERNESS,\*

*Or, Purgative Mineral Water of Citrate of Magnesia.*

## No. 1 (mild).

	grammes.	grains.
Citrate of magnesia . . . . .	40 =	617 360
Citric acid . . . . .	2 =	30 868
Simple syrup . . . . .	125 =	1929·252
Essence of orange . . . . .	q.s.	
Water charged with carbonic acid	q.s.	

to fill a common mineral-water bottle, containing 750 grammes (about the size of a wine bottle).

## No. 2 (strong).

	grammes.	grains.
Citrate of magnesia . . . . .	50 =	771·701
Citric acid . . . . .	2½ =	38 585
Simple syrup . . . . .	150 =	2315 103
Essence of orange . . . . .	q.s.	
Carbonic acid water . . . . .	q.s.	

for a wine bottle.

"The following is the formula for making 100 bottles of the above, each containing 50 grammes, or 771 grains of the citrate:—

"Dissolve 6 pounds 9 ounces and 364 grains (avoirdupois weight) of crystallized citric acid in 22 pounds of water, and add to the solution 1 pound 5 ounces and 83 grains (avoird.) of calcined magnesia. When the combination has been effected, filter the solution, and add to it 33 pounds (avoird.) of simple syrup flavoured with essence of orange. Distribute this solution in one hundred quart wine bottles.

"Then precipitate 2 pounds 10 ounces and 145 grains (avoird.) of sulphate of magnesia, with a sufficient quantity of carbonate of soda, in the usual way: wash the precipitate, put it into a proper apparatus, with about 90 pints of water, and pass carbonic acid through it until the magnesia is dissolved. This being effected, use the solution thus formed to fill up the bottles into which the previous solution has been put."

The following is the report of Messrs. Renauldin and Soubeiran on the above mineral water:—

The proportion of magnesia in the citrate is sensibly the same as that in an equal weight of the crystallized sulphate, but the former salt is not so powerful in its medicinal effects as the latter, the fifty grammes or 771 grains of citrate contained in the bottle of mineral water, being about equal in effect to thirty or thirty-five grammes (463 or 540 grains) of crystallized sulphate.

Notwithstanding the large quantity of citrate in the mixture, the taste does not at all indicate the presence of any salt: it resembles lemonade in flavour, and acts as a purgative, quite as well as the ordinary Seidlitz water. It certainly affords, from its agreeable taste, a good method of overcoming the repugnance of some patients to purgative medicines. It occasions neither thirst nor tenesmus, and but little pain during its operation: it may therefore be said that it operates safely and agreeably. Our observations would indicate that the proper dose of the salt is forty-five grammes (694 grains) for a man, and forty grammes (617 grains) for a woman.

In the preparation of the magnesia lemonade according to the above formula, the first part of the operation consists in making a citrate of magnesia with excess of acid. In the second part of the process part of the free citric acid is saturated with the carbonate of magnesia, carbonic acid being at the same time set free so as to make it an effervescent water, while there is sufficient uncombined citric acid to give it an acidulous taste.

In the following numbers of the "Journal de Pharmacie," there are remarks both

\* The common *Seidlitz-water*, as made on the Continent, contains sulphate of magnesia.

by Mialhe and Massignon on other and more simple modes of preparing lemonade of citrate of magnesia.

M. Garot recommends the following formula for the preparation of citrate of magnesia :

R	Carbonate of magnesia	15 parts.
	Citric acid	21 "
	Aromatic syrup	60 "
	Water	300 "

The citric acid is separately dissolved and added to the carbonate of magnesia diffused in water. As thus prepared it is not effervescing, but it is easily rendered so by adding only half the quantity of the acid, and reserving the addition of the other half until the dose is taken. The above proportions in grains would constitute a dose.

6. *Tincture of Hops*.—The following improved method of preparing this tincture is given by Mr. Coates.\* The hops, inclosed in a calico bag (as described by Dr. Burton),† and moderately compressed, are placed in a covered shop jar, and the requisite quantity of proof spirit added which will be found sufficient to cover the bag. By placing a piece of tinfoil over the top, provided the lid fit tolerably tight, evaporation will be prevented. After having been macerated the usual time, the clear tincture is allowed to drain off, and the bag, with its contents, transferred to the press. From  $\bar{\text{z}}\text{xx}$  spt. and  $\bar{\text{z}}\text{ij}$  hops, he obtained, by using, instead of a press, an ordinary lemon-squeezer,  $\bar{\text{z}}\text{xiv}$  of tincture, the remaining  $\bar{\text{z}}\text{vj}$  being absorbed by the hops. He then pours six ounces of water over the bag, and presses out the same quantity, which, presuming the tincture and water to have been equally mixed, will, of course, contain  $\bar{\text{z}}\text{ij}$  of the former. Six ounces of water are again added to the hops, and pressure employed as before. We have now  $\bar{\text{z}}\text{xij}$  of liquid containing  $\bar{\text{z}}\text{ivss}$  tinct. of hops, and  $\bar{\text{z}}\text{viiss}$  water, the exact quantity required for reducing  $\bar{\text{z}}\text{xiiss}$  spt. rect. to  $\bar{\text{z}}\text{xx}$  proof, which may be employed immediately for the next  $\bar{\text{z}}\text{ij}$  of hops, or placed on one side, properly labelled, till wanted.

7. *Hydrocyanic Acid, to determine the Strength of*.—We insert the following remarks on this subject by Mr. Kendal‡ not so much for their containing anything new in a chemical point of view, as for the extreme importance of the subject, and from our desire that all practitioners should be able to perform for themselves experiments of no intrinsic difficulty, but yet highly important in their results. After noticing the extremely variable strength of this acid as it is ordinarily procured, he proceeds to give the description of his method of testing it. We give the description in his own words, as it will not admit of condensation :

"With respect to the following plan of analysis, I have frequently contrasted it with the more precise method, by ascertaining the weight of the precipitated cyanide, and although in the hands of the skilful manipulator, and when the greatest possible exactness is required, that process is undoubtedly to be preferred, yet, in ordinary hands, and for ordinary purposes, this is quite sufficiently accurate.

"I take a stoppered bottle that will hold 2800 grains of distilled water at 62°, up to about the middle of the neck, which quantity I weigh into it, and mark the level of the water with a file. I then pour out a portion of this water, and weigh into the bottle 177·8 grains of pure fused nitrate of silver; when dissolved, water is poured in up to the mark in the neck. This forms the first solution, every 100 grain measures of which contain 6·35 grains of nitrate, and will be equivalent to 50 grains of Acid Hyd. P. L. or one grain of anhydrous acid. I measure 50 grains of the acid to be examined in a measure graduated to grains of water; I turn it into a  $\bar{\text{z}}\text{j}$  wide-mouth square bottle, and wash the measure with about 100 grains of water, which is added to the acid. I then measure 100 grains of the test solution, and pour it carefully into the acid. As I find neutralization approach, I drop it in very gradually: during the process it is necessary to stir briskly with a glass rod, which causes the precipitate quickly and perfectly to subside. This is especially necessary towards the close of the operation, when the addition of a drop of the solution merely causes a haziness which prevents the reaction being

\* Pharm. Journ. March 1847.

† Half-Yearly Abstract, Vol. II. p. 334.

‡ Pharm. Journal, April 1847.

seen; but by briskly stirring it becomes perfectly clear. By this means neutralization can be effected with the greatest nicety. Every 100 grains of the test solution exhausted will denote 1 grain, every 10 grains 1-10th of a grain, and every 1 grain 1-100th of a grain of real acid in 50 grains of that under examination; then by doubling the quantity in these 50 grains we of course get the per centage. I keep a bottle in which to preserve the precipitated cyanide until it accumulates sufficiently, when I gain more hydrocyanic acid from it, or reduce it.

"I have been thus minute in the details of this simple process, because I have many times failed in getting a satisfactory result until I did it as above."

8. *Strychnine, on the Mode of Extracting.*—The following method of extracting strychnine is due to M. Molyn,\* and possesses economical advantages over all others that have been yet proposed. It will be observed by the following description that the leading feature of this process is to allow the gummy and saccharine matter of the seeds of the *nux vomica* to undergo decomposition. Carbonic acid is disengaged, while the lactic acid which is produced decomposes the isasurate or strychnate of strychnine and brucine, forming with them very soluble lactates. The following is the mode of proceeding:

Mix nine pounds of *nux vomica* in coarse powder with water, so as to form a thin paste. Keep this at a temperature of from 68° to 78° Fahr. for several days, when fermentation will manifest itself by the disengagement of a large quantity of carbonic acid. The mixture is to be daily stirred, so that the whole of the powder may be exposed to the fermentative process. When the washed seeds are previously boiled for two or three hours, so as more completely to dissolve the gummy matter, the process is abridged. The fermentation is completed in eighteen or twenty days, and is indicated by the cessation of the disengagement of gas. The mixture is then passed through a hair sieve and pressed. The residue is boiled two or three times, according to the quantity of water employed. The liquids are left to become clear by deposition, and are then evaporated to about three gallons. Add nine ounces of quicklime in powder, well stirring the precipitate; let it stand for six or eight hours, then separate the precipitate, and submit it to strong pressure. Heat the liquid to the boiling point, and add a slight excess of sulphuric acid; sulphate of lime is formed, which is allowed to subside, and the supernatant liquor is evaporated to about four pints; to this one ounce of powdered quicklime is added, and the process above described repeated. The precipitate resulting from this process is pressed and added to the former: they are then dried and reduced to fine powder; this powder is digested in about ten pints of proof spirit, with a gentle heat. The spirit dissolves the brucine, the colouring matter, and a little of the strychnine, which may be recovered by evaporating the liquid and allowing it to crystallize. The precipitate, thus freed from brucine and colouring matter, and reduced to powder, is digested at twice in ten pints of spirits of wine, sp. gr. 823. The solutions, which will be nearly colourless, are filtered, and 4-5ths of the spirit recovered by distillation. On allowing the remaining solution to cool and stand for a day, the strychnine will be found at the bottom of the vessel, in the form of a white crystalline powder in a yellowish supernatant liquor. The liquor is to be decanted off, and the strychnine washed with proof spirit, which removes any remaining portion of brucine, and renders it chemically pure by one crystallization.

—In connection with this substance we may remark that a new test has been recently proposed for its detection by Otto, who advises that *a very minute quantity* of a solution of chromate of potash should be used in preference to the brown peroxide of lead recommended by Marchand. On adding this reagent to a solution of strychnine in concentrated sulphuric acid a splendid violet colour is developed, which is far more distinct and beautiful than that produced by the oxide of lead.

9. *Quinoidine.*—The interest that has been attached to the subject of amorphous quinine induces us to insert the following remarks of Dr. Winckler on this subject:†

\* Pharm. Journ., April 1847. Translated from the Journ. de Pharm. d'Anvers.

† Translated in the August Number of the Pharm. Journal, from the Pharm. Central Blatt, No. 20, 1847.



"In the year 1843 the author discovered that commercial quinoidine contained, besides more or less cinchonine and quinine, also a very large proportion of an alkaloid which was apparently in combination with two different, coloured, amorphous, resinous substances. This alkaloid was amorphous, and yielded only amorphous salts; but in other respects it did not differ from quinine, and had exactly the same combining weight as the latter. The author, therefore, recommended it to be purified and employed as amorphous quinine, in the same way as common quinine. He is, however, of opinion, that Liebig (who has recently proved by ultimate analysis, that these two bodies have the same composition) overvalues the importance of quinoidine. Dr. Winckler obtained from eight ounces of quinoidine, only three ounces of pure white amorphous quinine, so that no great pecuniary advantage can be derived from it; whilst, on the other hand, the crude and certainly cheap quinoidine should not be employed, on account of its variable composition, and its liability to adulteration.

"Crude quinoidine having such a variable composition, cannot always be obtained pure in the usual way, by dissolving it in alcohol, ether, acids, &c.; the author tried, therefore, to destroy the foreign substances contained in it, by sulphuric acid of sp. gr. 1.83—1.84, since the latter affects neither the amorphous nor the crystallizable quinine, nor cinchonine. Finely-powdered crude quinoidine was mixed in small quantities with an equal weight of sulphuric acid, so that each portion was separately dissolved before the other was added, an operation not easily performed, since the powder conglomerates almost always as soon as it is thrown into the acid. After the lapse of twenty-four or thirty-six hours, the mixture is copiously diluted with water, and the deep grayish-brown substance which separates during this process is filtered off. The latter, well washed, forms, if dry, a loose amorphous, almost black, not bitter mass (four ounces of the best crude quinoidine gave two drachms of it). To the filtered liquid (which is clear, dark blue, or brown, of an acid and afterwards bitter taste) whilst boiling, crystallized carbonate of soda is added, until a whitish precipitate forms—a dark brown resinous mass having already separated, on the liquid having been saturated with the carbonate of soda. The white precipitate being formed, as much crystallized sulphate of soda is added, as of carbonate of soda used. The mixture is frequently stirred, boiled in the water-bath for about a quarter of an hour, and then allowed to cool. After some time, the thin film of pale yellow, transparent, resinous compound covering the surface having been removed, a somewhat hard, resinous, bitter, almost black substance, often covered with some cinchonine, is found at the bottom of the vessel. The compound which covered the liquid is quinoidine, in a purer state; it is to be placed in the vessel intended to receive the filtered solution, whilst the filtrate is mixed with the required quantity of carbonate of soda for the effectual separation of the alkaloid. The almost white precipitate which had formed dries up, in a few minutes, to a resinous mass, and is now repeatedly washed with hot distilled water. A considerable proportion of quinoidine remains, however, still in the precipitated resinous substance; the same is, therefore, pulverized, and for some time digested with diluted acetic acid of about five per cent., till nothing more dissolves. The filtrate is mixed with sulphate of soda, by which a considerable quantity of an almost black resin separates, which adheres to the sides of the vessel. The filtered fluid, which is of a wine-yellow colour, yields, upon the addition of carbonate of soda, the quinoidine, which is likewise to be washed with hot water, and dried in the water-bath together with that obtained before. The quinoidine thus obtained forms a yellowish-white powder, which becomes electrical by friction, and dissolves perfectly in acid, spirit of wine, and also in ether. In which latter a brown, resinous, bitter substance is precipitated. Four ounces of the best quinoidine furnished thirty drachms of purified quinoidine, whilst very inferior sorts only contained a very small quantity of the same. If quinoidine, as it is obtained in commerce, be dissolved in diluted sulphuric acid (1 part to 3—5 parts of water) purified quinoidine is also obtained by the foregoing method, but the separation of the brown resinous combination takes place imperfectly, and consequently the product is less pure. Still the diluted acid is well adapted for purifying inferior sorts of quinoidine from foreign admixtures, which cannot be dissolved by acids.

Experiments were now made to purify quinoidine by ether. Eight ounces of

a very excellent sort of quinoidine, obtained from yellow cinchona (*cinchona regia*) were mixed with twenty-four ounces of pure ether. The powder immediately conglomerated into a resinous mass, whilst the ether assumed a yellow colour, like gold. The ethereal solution having been poured off after a few days' digestion, was treated with animal charcoal and evaporated: four ounces of a pale yellow, resinous, very bitter residue were obtained. This was converted by the necessary quantity of very diluted pure sulphuric acid into a neutral salt, and the solution evaporated by a gentle heat. Very soon a rather large quantity of pure sulphate of quinine crystallized out of it. This having been removed, no more crystals formed, even by further concentration. The solution was, therefore, again diluted, treated with purified animal charcoal, and the filtrate mixed with the necessary quantity of ammonia for precipitating the amorphous quinine contained in it. The latter separated in the form of a beautiful white precipitate, which, however, soon conglomerated again. It was now washed with distilled water, dried in the water-bath, and then pulverized; the powder weighed twenty-eight drachms, and consisted of very pure amorphous quinine. As that part of the amorphous quinine which had not been dissolved by the ether still tasted very bitter, twenty-four ounces of common ether were again added. This acquired a brownish-yellow colour, whilst the undissolved parts changed into a dark brown liquid of the consistency of treacle. The ethereal solution deposited after some days a considerable quantity of a crystalline mass, and left, by evaporation, about ten drachms of a light yellowish-brown, amorphous, resinous, bitter substance, which, being treated with pure ether, separated into almost colourless amorphous quinine, a considerable quantity of coloured cinchonine, and a deep yellowish-brown, resinous, very bitter compound. When the latter was treated, according to the above-mentioned method, with an equal weight of sulphuric acid, a large quantity of pure amorphous quinine was obtained from it. That part which had remained undissolved, after having been treated with common ether, was dried in the water-bath, triturated, and mixed with diluted acetic acid. By this it was almost all dissolved. On the addition of Glauber salt, however, a rather large quantity of a dark brown substance precipitated from the liquid, which, after being dried, possessed scarcely any bitter taste, and had a grayish-brown colour. The filtered acetic solution yielded, upon the addition of liquid ammonia, a very deep-coloured quinoidine, which gave scarcely any trace of amorphous quinine to ether. The compound which had spontaneously crystallized out of the solution prepared with common ether, was dissolved in spirit of wine of eighty per cent., and the solution, after being decolorized by animal charcoal, was filtered whilst boiling hot. On cooling, a large quantity of cinchonine separated in crystals, and also on further evaporation. At last, a small quantity of alkaloid crystallized in the form of fine white prisms. Its nature was the same as the alkaloid before mentioned by the author under the name of *Quinidine*. The cinchonine thus obtained amounted to three drachms, the quinidine to forty grains. Out of the last proportions of the mother liquor there was also obtained by evaporation, a light brown amorphous mass, from which a small quantity of amorphous quinine could be extracted by concentrated sulphuric acid.

"Although it cannot be denied that good quinoidine contains very much alkaloid, there is still, even in the best qualities, no part of the quinine free. It is always combined with a resinous substance. The amorphous quinine is further accompanied by a light yellow compound, which adheres obstinately to it, and renders the purification very difficult. The brown compound appears to be some red cinchonine, changed by the action of the lime: the yellow compound, however, seems to be a peculiar constituent of the bark. Of ten sorts of saleable quinoidine examined by the author, only three contained a comparatively large proportion of amorphous quinine, five contained but little alkaloid, and two only traces of it; and it is in consequence of this varying composition of the crude quinoidine, that it cannot be recommended for medicinal use. It will, however, be advantageous to free crude quinoidine by diluted sulphuric acid (one part acid of 1.38 specific weight, and two parts water) and by pure ether from the foreign admixture, so that it might represent a preparation of equal chemical composition. If ether containing water and alcohol be employed, a quinoidine of a very different composition is obtained, and even if pure ether be used, it will depend on the chemical

composition of the crude quinoidine whether the result will be a pure amorphous quinine, almost pure white, yellowish, or yellow like gold. In the latter case, part of the colouring matter might be removed by the formation of the neutral sulphate, and by treating it with purified animal charcoal. This, however, cannot be done without considerable loss. This colouring matter probably does not much influence the effect of the preparation. The yellow amorphous quinine becomes brown on the addition of concentrated sulphuric acid, and after some time, if water be added, some brown flakes are precipitated. If yellow amorphous quinine be dissolved in muriatic acid, and an excess of chloride of platinum added, a pure, double quinine salt is formed; but if the filtrate be mixed with sal ammoniac and the solution evaporated in the water-bath to dryness, a yellow salt remains as residue, which contains, besides the platinum-chloride of ammonium, a golden-yellow, not bitter, substance, which is insoluble in ether, but is soluble in anhydrous alcohol, and may thus be isolated."

Coffee has recently been proposed as a good medium for the administration of quinine, in consequence of its destroying the bitter taste. We must warn our readers against this mode of giving it, as an insoluble compound is formed, which lessens, if it does not altogether destroy, the efficacy of the remedy.

10. *Chloroform*.—Just as we are sending this sheet to press, we have received a pamphlet from Professor Simpson on the use of chloroform as a substitute for sulphuric ether in producing insensibility. The interest attached to the subject is such that we offer no apology for drawing pretty largely on the contents of the memoir. We may take this opportunity of stating that, in consequence of the completeness of the Editor's Report on Ether Inhalation in our last Volume, we have not deemed it necessary to notice that subject under the head of *Materia Medica*. After mentioning the different substances with which he experimented, Professor Simpson proceeds to say that he found chloroform infinitely more efficacious than any other, and that he can speak most confidently of its superior anæsthetic properties, having tried it on upwards of fifty individuals. Its utility is illustrated by some singularly striking cases of midwifery and surgical operations, for particulars of which we must refer our readers to the pamphlet itself.

"Chloroform," says our author, "was first discovered and described at nearly the same time by Soubeiran (1831) and Liebig (1832); its composition was first accurately ascertained by the distinguished French chemist Dumas, in 1835. It has been used by some practitioners internally; Guillot prescribed it as an anti-spasmodic in asthma, exhibiting it in small doses, and diluted 100 times. But no person, so far as I am aware, has used it by inhalation, or discovered its remarkable anæsthetic properties till the date of my own experiments.

"It is a dense, limpid, colourless liquid, readily evaporating, and possessing an agreeable, fragrant, fruit-like odour, and a saccharine pleasant taste.

"As an inhaled anæsthetic agent, it possesses over sulphuric ether the following advantages:—

"1st. A greatly less quantity of chloroform than of ether is requisite to produce the anæsthetic effect; usually from a hundred to a hundred and twenty drops of chloroform only being sufficient; and with some patients much less. I have seen a strong person rendered completely insensible by six or seven inspirations of thirty drops of the liquid.

"2d. Its action is much more rapid and complete, and generally more persistent. I have almost always seen from ten to twenty full inspirations suffice. Hence the time of the surgeon is saved; and that preliminary stage of excitement which pertains to all narcotizing agents, being curtailed, or indeed practically abolished, the patient has not the same degree of tendency to exhilaration and talking.\*

"3d. Most of those who know from previous experience the sensations produced by ether inhalation, and who have subsequently breathed the chloroform, have

\* "In practice I have found that any such tendency, even with ether, is avoided by, 1st, giving the patient from the first a large and overwhelming dose of the vapour, and 2dly, by keeping him perfectly quiet and still, and preventing all noise and talking around him. I have elsewhere insisted on the importance of these points."



strongly declared the inhalation and influence of chloroform to be far more agreeable and pleasant than those of ether.

"4th. I believe, that considering the small quantity requisite, as compared with ether, the use of chloroform will be less expensive than that of ether; more especially as there is every prospect that the means of forming it may be simplified and cheapened.

"5th. Its perfume is not unpleasant, but the reverse: and the odour of it does not remain for any length of time obstinately attached to the clothes of the attendant,—or exhaling in a disagreeable form from the lungs of the patient, as so generally happens with sulphuric ether.

"6th. Being required in much less quantity it is much more portable and transmissible than sulphuric ether.

"7th. No special kind of inhaler or instrument is necessary for its exhibition. A little of the liquid diffused upon the interior of a hollow-shaped sponge, or a pocket handkerchief, or a piece of linen or paper, and held over the mouth and nostrils, so as to be fully inhaled, generally suffices in about a minute or two to produce the desired effect.\*

"Chloroform may be made and obtained artificially by various processes,—as by making milk of lime, or an aqueous solution of caustic alkali, act upon chloral; by distilling alcohol, pyroxylic spirit, or acetone, with chloride of lime,—by leading a stream of chlorine gas into a solution of caustic potass in spirit of wine, &c. The preparation which I have employed was made according to the following formula of Dumas:

"R—Chloride of lime in powder	iv lb.
Water	xij lb.
Rectified spirit	f. 3 xij.

"Mix in a capacious retort or still, and distil as long as a dense liquid, which sinks in the water with which it comes over, is produced.†

"The resulting chloroform or perchloride of formyle consists of two atoms of carbon, one of hydrogen, and three of chlorine. Its specific gravity is much greater than that of water, being as high as 1.480. It boils at 141°. The density of its vapour is 4.2. It is not inflammable; nor changed by distillation with potassium, potash, sulphuric, or other acids."

11. ADULTERATIONS OF DRUGS.—*On the Detection of Guaiacum Resin in Resin of Jalap or Scammony.*—It has long been known that chlorine possesses the property of rendering guaiacum resin blue. It has been shown by Smedt‡ that the chlorides of soda and lime also possess this property, and may be used for detecting the smallest traces of this resin when mixed with resin of jalap. In fact, two grains of a mixture of fifteen parts of resin of jalap and one part of guaiacum resin dissolved in f. 3j of spirit, specific gravity 825, gives, on the addition of a single drop of solution of hypochlorite of soda (chloride of soda), a green streak, which is deposited as a precipitate at the bottom of the glass, leaving the supernatant liquor of its original colour.

The sensibility of this reaction is such, that the presence of one part of guaiacum resin in 320 parts of resin of jalap may be indicated.

Bondet§ has found that this test may be applied with equal advantage for detecting the presence of guaiacum resin in scammony.

12. *Adulteration of Mistich.*—It is observed by Landerer that the adulteration of this substance with olibanum, sandarac, and similar substances, is well known;

\* "When used for surgical purposes, perhaps it will be found to be most easily given upon a handkerchief, gathered up into a cup-like form into the hand of the exhibitor, and with the open end of the cup placed over the nose and mouth of the patient. For the first inspiration or two, it should be held at the distance of half an inch or so from the face, and then more and more closely applied to it. To ensure a rapid and perfect anæsthetic effect—more especially where the operation is to be severe—one or two teaspoonfuls of the chloroform should be at once placed upon the hollow of the handkerchief, and immediately held to the face of the patient. Generally a snoring sleep speedily supervenes; and when it does so, it is a perfect test of the superinduction of complete insensibility. But a patient may be quite anæsthetic without this symptom supervening."

† Gray's Supplement to Pharm., 1846, p. 633.

‡ Journ. de la Société de Pharm. d'Anvers.

§ Journal de Pharmacie, Nov., 1847.

but that for several years, during which the mastich crops have been scanty in Chios, it has been adulterated with sea-salt. He met with some exposed for sale at Athens, containing sixteen per cent. of this substance, and which presented no peculiarity of appearance.

13. *Adulteration of Olive Oil.*—M. Diesel\* has given the following mode of ascertaining whether olive oil has been adulterated with rape or poppy oil. Pure olive oil is coloured green by ordinary nitric acid. On the other hand, 1 drm. of olive oil, sophisticated with rape oil and mixed with 12 drops of nitric acid, exhibited a strong yellowish-gray colour. Comparative experiments with various mixtures of oil showed that this reaction was still perceptible even with the addition of one-tenth. The adulteration with poppy oil is likewise easily detected with nitric acid, but the mixture then becomes yellowish-white, and not brownish, as in the previous case. Pure nitric acid exhibits the reaction in a far less degree. Dr. Bley adds, that the samples must be judged of in the course of twelve hours after the addition of the nitric acid, as pure olive oil is likewise coloured more or less brown after a longer interval.

14. *The Action of Nitrate of Silver on the Liquids and Solids of the Body* has been investigated by Keller.† The use of this salt as an external application in affections of the mucous membranes of the eye and of the generative organs is generally allowed. These effects, says our author, are easily explained by the property which the salt possesses of destroying the vitality of the parts with which it comes in contact. Further, it decomposes the chloride of sodium and the soluble phosphates, so that there are formed two insoluble salts, the chloride and phosphate of silver. The frequent application of this salt to the epithelial cells of the mucous membranes not only causes their rapid separation, but also their rapid and abundant reproduction.

The mode of action of the salt, when taken internally, is not by any means so clear. From seven experiments, in which the blood, urine, and fæces of patients who had taken large doses (3 to 12 grains daily) for some months were examined, he was led to the conclusion that the whole was removed, in the form of chloride of silver, with the fæces. From a direct examination of its action on the gastric juice, he concludes that the whole is at once converted into chloride of silver, and consequently that no portion enters the circulation; he even goes so far as to regard the well-known change of colour as merely fortuitous. We need hardly state that the coloration in these instances is too certain to be doubted; we have far better evidence of its truth than that of Keller's accuracy. That the quantity entering the blood is *extremely* small, we do not doubt. In fact, similar experiments were made some time ago by Heller, with the same results.

15. *On the Purgative Action of Scammony and Jalap.*—From a series of 210 experiments instituted by M. Willemin,‡ in Rayer's wards, he came to the following conclusion. (The scammony used in these experiments was previously analyzed by Quevenne, and the resin was found to vary from 69 to 82 per cent.)

1st. Aleppo scammony (of good quality), in a dose of 16 grains, usually procures three or four evacuations.

2d. There is no danger in raising the dose to ℥j or gr. xxiv: the purgative effect is not increased, and is often less than that produced by 16 grains.

3d. The administration of the medicine with an acid, or the use of an acid drank afterwards, has no apparent effect.

4th. The addition of an alkali does not render the action more energetic.

5th. The resin of scammony, in a dose of eight grains, produces about the same purgative effect as 16 grains of scammony. The administration of 16 grains is followed by less active purgation, which diminishes still further on raising the dose to ℥j, or gr. xxiv.

6th. The resin of scammony is more liable to excite a sensation of heat in the stomach and about the anus, than that of jalap.

7th. The resin of scammony, in a dose of eight grains, is an excellent purgative. As we cannot foretell the amount of resin in the scammony of commerce, the resin itself is much to be preferred medicinally.

\* Archiv. der Pharm., as translated in the Chem. Gaz., 101.

† Journ. de Pharm., Dec. 1846.

‡ Archives Gén. de Méd., Août, 1847.

8th. The resin of jalap, in a dose of eight grains, purges as effectually as a similar quantity of resin of scammony.

16. During the past year we have received many highly important contributions to the *Materia Medica*, which it is entirely out of our power—in fact, out of our department—to attempt successfully to analyze in a brief report, which is confined for the most part to strictly practical matter. Amongst the most valuable of these we may mention:—

On the Fruit of *Amomum Meligneta*. By Jonathan Pereira,\* M. D., F. R. S.

On Alcornouque Bark. By Jonathan Pereira,† M. D., F. R. S.

On the Cardamoms of Abyssinia. By Jonathan Pereira,‡ M. D., F. R. S.

On the same subject. By C. F. Beke.§

Researches on Yellow Cinchona. By M. A. Gulliermond.||

On the Occurrence and Geographical Distribution of the Genuine Cinchona (*Cinchona Condaminea*), and of other Cinchona Species in the neighbourhood of Loxa. By Dr. Von Martius.¶

On the Astringent Juices known as Catechu, Gambor, and Kino. By M. Guibourt.\*\*

On Gutta Percha. By M. Soubeiran.†† (For a botanical character of the plant yielding it, we may refer to a paper by Sir William Hooker, in the October number of the “*Pharmaceutical Journal*.”)

Dr. Hamilton has continued his series of original contributions to the “*Pharmaceutical Journal*.” They embrace the consideration of—

1st. Some Species of the Genus *Amyris*.

2d. The Lemon Grass, or *Andropogon Schœnanthus*.

3d. The *Hymenæa Courbaril*, or Locust Tree.

4th. The properties of the *Bocconia Frutescens* and *Clusia*.

5th. The Canna Achera, or Tous les Mois.

6th. The medicinal and economic properties of the *Sapendus Saponaria*, Soap Berry, or Black Nickar Tree.

M. Soubeiran‡‡ and Bouchardat have published an excellent memoir on the choice, mode of preserving, and cleansing of Leeches.

—We have also had some excellent memoirs on the state of Pharmacy in different countries. We may especially direct the attention of our readers to memoirs on the present state of Pharmacy in Africa, by Landerer, and its present state in England, by Professor Rose; also to a series of papers, by (we believe) the Editor of the “*Pharmaceutical Journal*,” on the past history and present state of Pharmacy in Belgium, America, Denmark, China, Spain, and Russia.

17. *EXTERNAL APPLICATIONS.*—On the Preparation of Pencils of Nitrate of Silver and Potash.—By Gassicourt.—Mix nitrate of silver and nitrate of potash, and fuse them in a silver or platinum crucible; stir from time to time with a glass rod. As soon as the mixture is in a state of quiet fusion, pour it into a mould previously heated and oiled, in order to prevent the nitrate adhering to its walls. When the nitrate has solidified, the mould must be opened, and the cylinders removed, wiped, and laid up for use.§§

18. *A New Blistering Tissue* has been recommended by Gacoste.||||—The following is the formula for its preparation:

Black pitch, purified . . . . .	125 parts
White wax . . . . .	30 “
Cantharides in fine powder . . . . .	60 “
Essence of turpentine . . . . .	15 “
Olive oil . . . . .	8 “

The pitch is purified by melting it in a dish, and straining it through a close piece of linen.

The pitch, thus purified, is melted, in an earthen vessel over a gentle fire, with

\* *Pharm. Journ.*, March. † *Ibid.*, Feb. 1847. ‡ *Ibid.*, April. § *Ibid.*, May.

|| *Journ. de Pharm.*, June 1847. ¶ *Büchner's Repertorium*, vol. xlv., No. 3.

\*\* *Journ. de Pharm.*, Jan., Avril, Mai, Juillet, Sept. et Oct. 1847.

†† *Ibid.*, Jan. 1847.

‡‡ *Ibid.*, Mai 1847.

§§ Desmarres' *Traité des Maladies des Yeux*, page 224, note. See page 272 of Mr. Ansell's Report on Ophthalmic Surgery.

|||| *Journ. de Pharm.*, Sept. 1847.



the wax; the cantharides, the oil, and the essence of turpentine are then added; when the mixture is well stirred, a small quantity of the plaster is thrown into cold water and kneaded; if it be neither too soft nor too brittle, it is then spread on the glazed side of some oil-cloth with a plaster-iron slightly heated.

The quantity of wax, oil, and essence may be varied according to the quality of black pitch employed, so as to give the plaster a consistence suitable for its being spread on cloth. Copper vessels should never be used for preparing those medicinal compounds of which wax is an ingredient; the plaster should be melted in a glazed earthen vessel. The cantharides are added by means of a sieve, so as to divide the particles, and prevent their collecting into lumps. It is convenient in sending out the blistering cloth, to cut a piece of oiled paper of the same size, and lay this over the surface of the plaster, to prevent its adhering to the envelope.

These vesicatories should never be camphorated with a solution of camphorated ether, but rather with camphor finely pulverized, and for this purpose the blistering-cloth should previously be slightly warmed.

Of all the formulæ published for blistering-plaster, there are none more easy in application, and that will keep in a better state of preservation than this.

19. *Ammonia*, as a vesicant, has, at different times, been recommended in various forms of application. Mr. Schacht,\* of Clifton, has recently described the following mode of using it:

If six drops of a liniment consisting of one drachm of the liq. ammon. fortiss., and two drachms of olive oil, are applied to the woollen side of Markwick's impermeable piline, and this is gently pressed upon the skin with a handkerchief, we shall have, in the course of ten minutes, a perfect blister as large as a crown-piece.

Boudet has contributed a memoir on this subject, in which, after reviewing the processes hitherto recommended (one of which, that of M. Bonitace, closely resembles that of Mr. Schacht), he gives a very decided preference to that of Dr. Tonnélé, of Tours. The method consists in putting some of Gondret's ammoniacal pomade in a small plated tin cup, applying it to the skin for 10 or 12 minutes, and then rubbing the skin with a rather rough cloth, so as to detach the epithelium. This method prevents the escape of ammonia, and causes the vesication to be both sure and rapid. Care must be taken, however, that the edges of the cup are in close contact with the skin; this may be always effected by a luting of soft wax. The whole must be fastened by a band or riband. It may happen that Gondret's pomade is not at hand, and as its preparation requires nearly an hour, Boudet proceeds to consider the best mode of applying liquid ammonia in such cases. Two conditions are requisite in order to ensure its action as a vesicant. 1st We must use a solution of ammonia of specific gravity .906, and not of .923 [à 25° et non pas à 22°]; and, 2d, steps must be taken to hinder its evaporation during the operation.

The latter condition is best satisfied by placing on the part which it is intended to affect, four or five layers of blotting paper, well soaked in the ammoniacal solution, and covering it in the manner already recommended for the pomade.

This method of vesication is well adapted for the endermic application of the salt of morphia, and other medicines.

20. Amongst other external applications we may notice the following mode of preparing opodeldoc, or soap-liniment, as recommended by Dünhaupt:†

In order to obtain pure opodeldoc, he puts dry scraped soda-soap, and camphor into a glass bottle, half filled with highly rectified spirit of wine. The bottle is placed in hot water, the cork now and then a little loosened, and the soap dissolved by shaking. The volatile oils and solution of caustic ammonia are then added, and the whole shaken until a cloudy mass precipitates, and the solution appears clear. This turbid matter effects, by shaking, the clarification in the same manner as the white of eggs. The solution is then quickly filtered through a piece of linen, which retains the cloudy fluid, and the well-closed vessel containing the filtered liquid is placed in hot water until the opodeldoc becomes as clear as wine,

\* Pharmaceutical Journal, Feb. 1847.

† Pharm. Journ., July 1847; from the Pharm. Centrall Blatt.

upon which the vessel is removed into very cold water, in order to cool the contents as speedily as possible.

21. We likewise give Menier's\* prescription for *Le baume tranquille*, which is, we believe, employed extensively in France as an external application in rheumatism, &c.:

R	Fresh leaves of belladonna,	}	āā 125 grammes.
"	" hyoscyamus,		
"	" dulcamara,		
"	" tobacco,		
	stramonium,	}	āā 32 grammes.
	White poppies.		
	Dried heads of hyssop,		
"	" millepertuis,		
"	" elder,	}	āā 8 grammes.
"	" sage,		
	Volatile oil of wormwood,		
"	" lavender,		
"	" marjoram,	}	āā 8 grammes.
"	" mint,		
"	" rue,		
"	" thyme,		
"	" rosemary,	}	
	Olive oil, 3 kilogrammes.		

These numbers are very nearly in the proportion of 16, 4, 1, and 425.

The narcotics are first bruised in a mortar: they are then boiled with olive oil in a copper vessel, over a small fire; the dried heads are then thrown in, and when the water contained in the plants is expelled, the whole is allowed to cool. It is then strained in a press, and the volatile oils are finally added.

22. Amongst the best works that have appeared during the past year on the subjects of which this Report treats, we may especially mention new and enlarged editions of Trousseau and Pidoux's "Treatise on Therapeutics and Materia Medica," and Soubeiran's "Treatise on Pharmacy." Mohr has published (in German) a "Treatise on Practical Pharmacy," and we are happy to find that an English translation, with copious additions, will shortly appear from the pen of Professor Redwood. Mohr is also publishing a "Commentary on the Prussian Pharmacopœia," of which, as far as it has yet appeared, we can speak favourably. A series of lectures on Materia Medica, by Dr. Roupell,† is now in the course of publication: as far as we can judge from those that have already appeared, the arrangement seems extremely simple and judicious. We shall return to them in our next Report, when the course is completed.

We have also received a copy of the fourth edition of Mr. Beasley's useful compendium of the British and Foreign Pharmacopœias,‡ the additions to which, as respects the doses of the more recent and active medicines, render it a very complete work.

\* Journ. de Pharm., Feb. 1847.

† In the Medical Times.

‡ The Pocket Formulary and Synopsis of the British and Foreign Pharmacopœias, &c.

## VI.

### REPORT ON THE PROGRESS OF PUBLIC HEALTH.

BY WILLIAM A. GUY, M. B. CANTAB.

Professor of Forensic Medicine, King's College, and Physician to King's College Hospital, &c.

SINCE the publication of the analysis of that part of the Report of the Health of Towns Commission which refers to the metropolis,\* many valuable contributions have been made to that portion of medical and popular literature which refers to the prevention of disease and the preservation of health, especially in our large towns; a new sanitary commission has been appointed for the metropolis; and the legislature has passed some important practical measures. A comprehensive measure of sanitary reform is, however, still a desideratum, and is anxiously looked for at the hands of the government. In the present state of the sanitary question, it would seem desirable to restrict this abstract chiefly, but not exclusively, to matters bearing directly on that question as it is generally understood in England,—to the state of the public health during the past year, the condition of our large towns and populous places, the leading remedial measures, and the march of legislation,—disregarding for the present many questions of scientific interest, but of secondary practical importance, which are occupying the attention of our continental neighbours, and postponing for another year that complete and minutely arranged abstract, that will ere long be demanded and justified by the rapid progress of the science of hygiene which must follow on the enactment of a large measure of sanitary reform, and the appointment in every town and populous district of medical officers of health and competent surveyors. The first subject which naturally demands attention is the state of the public health during the period embraced in this Report.

#### § I.—*State of the Public Health in the Year ending Sept. 1847.*

The year 1846 was marked by a higher mortality than any of the eight complete years embraced in the Reports of the Registrar General.† When measured by the very moderate standard of 2 per cent., the excess of mortality in the twelve-month ending June 1847 amounts to no less than 66,712! in one-fourth part of the population of the United Kingdom; that is to say, in the registration districts of England and Wales comprised in the quarterly returns. The total number of deaths registered in the 117 districts of England and Wales comprised in these valuable records was 192,104, which exceeds by 20,000 deaths the number registered in the unhealthy year 1840. By adding the last quarter of 1846 to the first three quarters of 1847, and proceeding in the same manner with previous years, it appears that of the eight years thus commencing with October and ending in September, the year 1846-7 is by far the most unhealthy, for while the total number of deaths in 1845-6 was 178,332, that in 1846-7 amounted to no less than 210,262, being an excess of 31,930. There has been, in fact, a progressive increase of mortality from 1842-3 to 1846-7, just as from 1839-40 to 1841-2 there had been a progressive decrease. The mortality in the last quarter of 1845 very slightly exceeded the minimum in the same quarter of previous years, and the first quarter of 1846 was below the average. It was with the second quarter of that year that

\* Half-yearly Abstract, Vols. III. and IV.

† See a table in the return for the quarter ending Sept. 30, 1847.



the great increase of deaths first showed itself, the number (43,734) exceeding by nearly 1700 that registered in 1840 (42,074). The deaths in the third quarter of 1846 exceeded by nearly 12,000 the deaths for the corresponding quarter of 1840; while those for the last quarter of 1846 were in excess over the corresponding quarter of 1840 by nearly 9000. An increase to a somewhat larger extent characterizes the first and second quarters of 1847, and it is not till the third quarter of the present year that any decrease is perceived. The number for this quarter is 49,479, which exceeds by about 10,000 the mortality of 1840, but falls short of that for 1846 by nearly 2000. These details will be rendered more intelligible by the following table:—

Quarter ending	December	1845	39,321
"	March	1846	43,850
"	June	"	43,734
"	September	"	51,427
"	December	"	53,093
"	March	1847	56,105
"	June	"	51,585
"	September	"	49,479

The amount of sickness was, probably, proportionably greater than the mortality. Fever, for instance, though extremely prevalent, was not so fatal as in most previous epidemics, except where it attacked the higher and middle classes. Catarrhal affections were also in great excess, and scurvy, and diseases accompanied or characterized by discharges of blood, have been unusually frequent. Melæna was more frequently superadded to diarrhœa than the writer ever remembers to have observed in former years, and attacks of hæmatemesis, hæmaturia, and epistaxis were of frequent occurrence. The year 1846-7 has, therefore, been characterized both by a high mortality and a great prevalence of sickness—conditions which are by no means inseparable.

The deaths for the whole of England and Wales during the years 1845 and 1846 were not made up at the end of 1846, but a calculation has been made of the probable number in each of those years. The following table displays the total number of deaths in England and Wales for each of the years from 1838 to 1846 inclusive (the last two being estimates):—

1838	342,547	1843	346,446
1839	338,979	1844	356,950
1840	359,634	1845	352,000
1841	343,847	1846	406,000
1842	349,519		

The chief causes of the great mortality of 1846-7 are the high price of food, and the increase of fever imported from Ireland by an immigrant population of persons in the extreme of destitution. The increase of deaths in the 117 registration districts of England and Wales is not, therefore, to be attributed solely to an excessive mortality of their own proper inhabitants, but to the addition thus made to the resident population. This scourge fell with full weight on the town of Liverpool, but afflicted more or less other sea-ports and populous places accessible to these miserable hordes, and offering the temptation of private charity or a liberally dispensed poor-law. The metropolis was subject to a great increase of mortality, and the same remark applies to Liverpool, Manchester, Salford, and Chorlton, Birmingham, Dudley, Wolverhampton, Shrewsbury, Leeds, Hull, York, and Sunderland. The chief increase of mortality took place under the head of smallpox, measles, scarlatina, diarrhœa, cholera, dysentery, remittent fever, typhus fever, and erysipelas; in a word, from the zymotic class generally. There was also an increase of deaths ascribed to privation. The mortality of Liverpool in the summer quarter of 1847 was nearly double that of the corresponding quarter of 1846, and almost treble that of previous years. No other town presents so fearful an increase. The Registrar-general, speaking of this fever-stricken city, uses the following striking language: "Liverpool, created in haste by commerce—by men too intent on immediate gain; reared without any very tender regard for flesh or blood; and flourishing, while her working population was rotting in cellars, has been severely taught the lesson that a part of the population, whether in cellars or on distant

shores, cannot suffer without involving the whole community in calamity." In itself one of the unhealthiest towns in the kingdom, Liverpool has for a year been the hospital and cemetery of Ireland. The deaths registered in the four quarters of 1846 were 1934, 2098, 2946, and 2735; in the three quarters of 1847, ending in September last, 3068, 4809, and 5669! The short notes of the registrars represent most correctly and vividly the piteous spectacle which this great town presented, with the floating lazarettos on the Mersey, the workhouses crowded with destitute paupers, the three large sheds, which will hold 300 persons, nearly full of patients at the same time, and the fever "getting more prevalent among the upper classes." There is too much reason to fear that the decrease of mortality which has begun to show itself in the third quarter of 1847 will be but a temporary mitigation of a great calamity; for though provisions are more plentiful and cheap, large numbers of working men are being thrown out of employment, the Irish immigration has not ceased, and there is too much reason to fear that the money, so much wanted at home, will be again wasted on the exaggerated necessities of the sister kingdom. Should the winter prove severe, a great increase of mortality both in England and Ireland will inevitably take place. The influenza has already proved extremely fatal, and is but too likely to be aided in its work of destruction by the cholera.

### § II.—*Health of the Metropolis.*

The deaths registered in the September quarter of 1847 were 13 187, the numbers in 1845 and 1846 being 10,987 and 12,601 respectively. Excluding violent and sudden deaths, and adding the last quarter of the year 1845 to the first three quarters of 1846, and the last quarter of 1846 to the first three quarters of 1847, we obtain results nearly in conformity with those for the 117 districts of England and Wales. The year 1847 exhibits an increase of deaths for the first three quarters, and the returns for the first weeks of the fourth quarter also exceed the average. The week ending Nov. 27 shows an increase of nearly 700, while that ending Dec. 4 is twice the average. This remarkable increase corresponds with an unexampled epidemic of influenza. The number for the year 1845-6 was 45,787, and for 1846-7, 51,742.

The Registrar-general, in his recent quarterly reports, has devoted much space to the mortality of the metropolis, and the comparison of its several districts with more healthy standards. In the first Annual Report for 1839, the mortality in 32 districts of London was calculated, and it was shown that, in 1837, the mortality increased from 18 in the healthiest districts, to 32 and 39 in the crowded poor districts, and the general principle was established, "that the mortality has a tendency to increase as the population increases, but that the unhealthful tendency can be counteracted by artificial agencies: in other terms, that the mortality of cities in England is high, but that it may be immeasurably reduced." As, however, the calculations in the earlier reports relative to London were partly derived from the census returns of 1831, from which the ages of the living were omitted, so that the mortality at different ages could not be determined, the above conclusions were still open to doubt. The census of 1841 has supplied all the elements of correct and unexceptionable calculations, and enabled the Registrar-general to display, in a very striking and convincing manner, the unhealthiness of the metropolis, and the consequent necessity for a good and efficient sanitary measure. In the report for the quarter ending March 31, 1847, a comparison is made between the mortality of London and that of Lewisham (the most healthy registration district of the metropolis) in the seven years, 1838-44. The number of deaths under 5 years of age, from 5 to 25, from 25 to 65, and at 65 and upwards, for London and Lewisham respectively, are given in a table, from which it appears, that the actual number of deaths in London, under 5 years, was 139,593, but that if the mortality had been the same as in Lewisham, it would have been only 80,632, so that, in the short space of seven years, there was an excess of deaths by causes peculiar to London, of 58,961, or 8423 a year. In the interval from 5 to 25, the actual number of deaths in London was 40,828, which exceeded the number that would have happened if the mortality had been at the same rate as in Lewisham, by 5122 deaths, or 731 deaths in the year. The period from 25

to 65 exhibits a larger excess, the deaths in London numbering 109,126, which at the Lewisham rate would have been only 83,447; or less by 25,679, being 3668 a year. At 65 and upwards, the actual mortality in London was 52,453, the Lewisham rate would have given 44,313; so that the excess was 8,140, or 1158 a year. The total number of deaths at all ages for the seven years was 342,000, or about the annual mortality of the whole of England and Wales; the deaths which would have happened at the Lewisham rate are 244,128, and the total excess in London for the seven years, above a healthy standard, 97,872. This number divided by seven, gives an annual sacrifice of 13,981, or very nearly 14,000 lives. So that, to use the forcible language of the report, "the plain fact is that, one day with another, 134 persons die daily in London; that the great majority are untimely deaths—children, fathers, mothers, in the prime of life; and that at least 38 die daily in the excess of the rate of mortality which actually prevails in the immediate neighbourhood."

The high mortality which prevails in the metropolis is further illustrated in the return for the quarter ending Sept. 30, 1847, by comparing the deaths which took place in that quarter with those which would have happened if the mortality had been at the same rate as that which prevailed in the county of Dorsetshire, in the September quarters 1838-44. The deaths registered in London under 15 years of age, in thirteen weeks ending Sept. 25, 1847, were 6534: the rate in Dorsetshire during the period referred to would have given 3078, or considerably less than half that number; so that, measured by this standard, there was an excess of deaths in London of 3506. From 15 to 35, the deaths in London were 1786, which, at the rate prevailing in Dorsetshire, would have fallen to 1709, being an excess of 77 deaths. From 35 to 55, the deaths in London amounted to 1983: the Dorsetshire rate of mortality would have given 1367, showing an excess of 616 deaths. The deaths at 55 and upwards, were in London 2834; they would have been, at the rate for Dorsetshire, 1955, giving an excess of 879 deaths. The total deaths in the quarter amounted in London to 13,187. If the same rate of mortality had prevailed as in Dorsetshire, they would have been reduced to 8109. So that in the quarter ending Sept. 25, 1847, there was an excess in London above a healthy standard, of no less than 5078 deaths. These facts are thus summed up in the report:—"3506 children under 15 years of age were destroyed in London, in addition to 3078 carried off by causes which may be supposed to be the same as those fatal in the country. The mortality is equal at the age 15-35, when London receives healthy recruits from the various counties. After the age of 35, the mortality is 45 per cent. higher in London than in Dorsetshire. If the chance that a man above 35 will die in the country during the summer quarter be represented by 2, the chance that he will die in London is nearly 3." It would have been more satisfactory to compare the deaths in London with those in Dorsetshire, for the same quarter of the same year. The mortality of London is evidently exaggerated by thus contrasting a notoriously unhealthy year with the more healthy average of 1838-44. There is no doubt, however, that in any case London would be found to exhibit a very large excess of mortality.

As objection may be fairly taken to a comparison of the mortality of London with that of Dorsetshire, or even of the comparatively healthy registration district of Lewisham, it may be well to show what the excess of deaths in the same seven years, 1838-44, would have been, if the acknowledged moderate standard of 2 *per cent.* were substituted for the rate of mortality prevailing in Lewisham registration district. The population of the metropolis on July 1, 1841, was 1,950,526, and the deaths in the seven years, of which 1841 is the middle term, were 342,000. A calculation founded upon these data gives an excess of deaths in the seven years, over and above 2 *per cent.* of 78,172, being at the rate of no less than 11,167 a year. So that even at this very moderate rate of calculation, the sacrifice of life in London reaches an appalling magnitude.

The relative mortality of different parts of the metropolis is also carefully investigated by the Registrar-general, and as this too is a matter of great importance at the present time, a brief notice of the results is here given. The city of London has been labouring under the strange and unaccountable delusion that "for health, cleanliness, effective drainage, lighting, and for supply of water to its inhabitants, it cannot be surpassed." This registrar-general has felt it to be his bounden duty



to rectify this mistake, as far as the health of the city is concerned, by stating that, in the city without the walls, out of 13,631 deaths recorded in seven years, upwards of 5000 would have been prevented if this delusion had been a fact. The late Dr. Lynch has the merit of demonstrating that in the Ward of Farringdon Without, the unsurpassed cleanliness, drainage, lighting, and water-supply were much more imaginary than real. In the same report the equally unfounded pretensions of Marylebone and Brighton, so forward in their opposition to sanitary measures, are refuted, by a comparison with the mortality of East Grinstead, Hordsham, and Cuckfield, from which it appears that out of 1000 males, Marylebone and Brighton lose 25, and these more healthy districts only 17 every year, while Marylebone loses 20, Brighton 19, and the other districts only 17 in the thousand females.

The place occupied in the sanitary scale by the several districts of the metropolis, is well shown in a table marked C, in the report for the quarter ending March 31, 1847. The several districts are arranged in the order of the mortality of females at all ages, the healthiest districts being placed first. The table is founded on the population returns of 1841, and the deaths registered in the seven years, 1838-44. The results are best displayed in the following table:—

1. Lewisham and St. George, Hanover square . . . . .	16 per thousand.
2. Hampstead, Hackney, and Camberwell . . . . .	17 “
3. Wandsworth and Islington . . . . .	18 “
4. Kensington, Chelsea, City of London, St. James, Westminster, and Marylebone . . . . .	20 “
5. Pancras, Newington, and Poplar . . . . .	21 “
6. Lambeth and Greenwich . . . . .	22 “
7. St. Martin-in-the-Fields, Stepney, Clerkenwell, Bethnal Green, and Holborn . . . . .	23 “
8. Strand and Shoreditch . . . . .	24 “
9. Westminster, Bermondsey, Rotherhithe . . . . .	25 “
10. St. Giles, and St. George, Southwark . . . . .	26 “
11. St. George-in-the-East, St. Saviour, St. Olave, and St. Luke . . . . .	27 “
12. East London, West London, and Whitechapel . . . . .	28 “

If the relative salubrity of the several districts were measured by the less accurate standard of the mortality of males, or by the deaths in either sex, or in both sexes, under 5 or above 65, a different result would be obtained. The table gives the means for either of the comparisons now referred to.

### § III.—*Condition of Large Towns.*

The degree to which a nation may be ignorant of its real condition, in matters which affect the health and lives, the comforts and well-being, physical and moral, of the people, has never been more strikingly displayed than in the Reports of the Health of Towns Commission, and in those local reports which are constantly issuing from the press. The inquiries of the commission into the sanitary state of fifty of the largest towns of England and Wales, where the mortality was the greatest—towns including the great seats of manufacture, and the three greatest ports after London, and comprising a population of upwards of 3 000 000 persons—showed that, in the three leading requisites of drainage, cleansing, and water-supply, the great majority were in a most disgraceful condition. The drainage was reported to be scarcely good in 1, indifferent in 7, and bad in 42; the cleansing was nearly the same; and the water-supply good in 4, indifferent in 7, and bad in 39. Such being the summing up of the evidence, it is not difficult to imagine the items of which it consists. Those which refer to the metropolis have been already briefly noticed. (Abstract, Vols. III. and IV.) It would have appeared a vain repetition to have given the evidence collected with regard to the provincial towns, especially as those who desire to study the condition of those towns can easily refer to the reports themselves. Not so, however, with regard to the local reports which have been subsequently issued: and which, not being readily accessible to the majority of the readers of the “Abstract,” properly find a

place in these pages. The metropolis naturally claims precedence in this matter as in others:

*State of the Metropolis.*—The condition of the more central parts of London, which constitute the city without the walls, already shown to occupy so low a place on the sanitary scale, may be judged of by the following abstract of the memorial presented to the Lord Mayor, May 25, 1847, by the inhabitants of Farringdon Without, headed by the late indefatigable advocate of sanitary measures, Dr. Lynch. This memorial stated that of all the thirty-six metropolitian districts the Ward of Farringdon Without is perhaps the worst. The houses are built back to back, and admit of no ventilation. The cesspools, which are all but open, poison the air and pollute the dwellings of the poor. In such places where there are sewers, they become the sources of disease, in consequence of the want of traps and an adequate supply of water to cleanse the outlets of filth from the houses, and to facilitate the escape of pestiferous gases from the decomposition of animal and vegetable matter. In Crown court, within a few yards of Fleet street, the cellars of the houses are in a most revolting condition from the overflowing of cesspools, and the accumulation of impurities of every description. In some instances, the dust contractors had not removed the filth for nine months, and they refused to perform that duty unless they received a gratuity. The poor inhabitants, sensible of the injury which such abominations inflicted, complain of the inadequate supply of water, which visits them for no more than one hour three times a week, and that their poverty prevents them from keeping vessels in which to save it. They complain, too, of the quality of the water, confined as it is in heated rooms, and absorbing animal exhalations and foul air. The drains run under a stack of houses, instead of into the main sewer; and there is at present no power to compel the landlords to open these drains direct to the sewer. The inquest of St. Sepulchre state that the courts around Smithfield and the Old Bailey are undrained, and that cowsheds, slaughter-houses, and knackers' yards are suffered to exist in the midst of a crowded population. The apprehensions to which this state of things naturally gave rise were increased by the influx of Irish paupers, and the consequent over-crowding.

If from the city of London without the walls, we pass to the richest parish in London, Marylebone, with property rated to the poor to the amount of upwards of £500,000, or an average of £37 to each house, we find a similar state of things existing.

This parish, which took so active a part in opposing Lord Morpeth's Bill, has recently appointed a sanitary committee, which has justified in every point the statements put forth in the Reports of the Health of Towns Commission, as to the disgraceful and neglected state of the metropolis generally, and of this populous parish in particular.\* The Report of the committee gives the usual history of over-crowding, deficient supplies of water, defective cleansing and sewerage, the existence of nuisances, and the unwholesome condition of the houses of the poor.

Among the nuisances particularly specified are slaughter-houses, melting-houses, crowded graveyards, pigsties and dust-heaps. In reference to the state of the dwellings of the poorer classes, the Report states that "there appears to be generally great indifference on the part of landlords or houses, to the wants or comforts of the poor, most of the premises in the occupation of the poor being badly drained and ventilated, very dirty, and no attention paid to cleansing or repair; in many cases, the basements are so dark as to require candles to descend to the ground-floor, there being as few windows as possible, no openings over area-doors, as such openings, even unglazed, would subject the owners of the house to the window-tax, the law, to avoid the tax, requiring that the passage should be absolutely dark. The conveniences, in many cases, only one for several houses, and where there is one to each house, it is generally much neglected.

"In many parts of the district, as may be seen by reference to the notes of the inspectors, as in Gee's court, Barratt's court, Gray's buildings, and Calmell buildings, the privies of the houses are in a most foul and offensive state, in many cases, the tops of these places being removed, or where they remain, the seat,

\* Times Newspaper, Nov. 15, 1847.

floors and passages are covered with filth." The Report goes on to state, that the sewage "is manifestly insufficient for the wants of the locality, no fewer than 280 streets and ways in the parish being wholly without proper sewage, and a great portion of the remainder defective or incomplete." Speaking of the supply of water, the reporters state that "they have found, in most localities, the supply of water laid on in the depth of the area in front of the house, the approach to which (owing to the window-tax) is through a dark passage, while the privy is in the back-yard, as far as possible from the supply of water, with drains running through the houses, and there is no water to cleanse them." The remedies suggested by the reporters are, the removal of slaughter-houses, melting-houses, and pigsties, the compelling of the dust-contractors to perform their duty, and the active abatement of nuisances under the 9th and 10th Victoria, Chapter 96. They also urge the abolition of the window-duties, protest against the irresponsibility of the sewer-commission, and the absence of all control over the water-companies. In a word, the reporters confirm the strongest statements of the advocates of sanitary measures, and appear to be perfectly in accord as to the proper measures to be adopted, with the sole exception that "they are still firmly of opinion, that representative and freely elected bodies, properly constituted under the sanction of Acts of Parliament, and armed by the legislature with sufficient power, are capable, not only of carrying out, but of performing, in the most efficient and constitutional manner, everything possible, and which ought to be done, in the way of sanitary regulation." As no mention is made of the necessity for extra-parochial knowledge or skill, or central supervision, it is to be presumed that they still adhere to their original opposition to all government interference and control. This self-confidence is certainly not justified by the history of the past, for we learn from the *Report of the Health of London Association*, that "the vestry, under the local act, is empowered 'to nominate persons to carry out the dust, dirt, cinders or ashes.' " This power, which implies the concurrent right and duty of seeing that the contracts are faithfully performed, they have not exercised, nor can we see what guarantee the public have for its exercise in future, except it be in that government superintendence and control which they repudiate.

The parish of St. James, Westminster, as we learn from the following quotation, is not in a better condition than Marylebone:

"There are numerous narrow streets in the parish, and 28 courts and alleys, many of which are only open at one end. The greater portion of the houses in these places, are let out in rooms to the families of artisans. These lodgings are of a most indifferent description, ill-ventilated, worse drained, wanting in water and every proper convenience, and within and without reeking with foul odours. The cesspools and appendages are generally in the most confined yards, and in some of the courts, open privies, with the most unblushing publicity, show the low state of decency to which the circumstances they are placed in have reduced the inhabitants. But as if there must be, even in these wretched scenes, degrees of abomination, several of the courts have, till very recently, been used as lay-stalls for the refuse of the markets, and parts adjacent."\*

The following passage from the lecture of Lord Ebrington, embodies the results of his personal examination of the parish referred to in the preceding quotation:

"Some of these rooms were over-crowded cow-houses, where cows, diseased by the badness of the air, supply the neighbourhood with diseased milk; some close to slaughter-houses, where I saw the steam reeking up from hot carcasses; some over cesspools, cleaned out some once in five, others once in seventeen years; the walls were filthy, the smells either abominable, or exchanged for a closeness still more oppressive: the passages dark and tortuous. And yet, here were living the most respectable of the labouring classes, porters, policemen, and such like, who, though earning high wages, are pauperized by the expense of the sickness brought on them by moist dwellings, for which they pay in rent for their one miserable room, as much as Mr. Ashworth, of Egerton, a manufacturer such as this country may well be proud of, receives from his prosperous work-people for cottages which I saw, containing five, six, and seven rooms, each with every convenience."†

\* An Address to the Inhabitants of St. James, Westminster, by a Retired Churchwarden.

† A Lecture delivered at the Mechanics' Institution, Plymouth, 1845, by Lord Ebrington.



That the rural environs of London are capable of furnishing scenes of neglect and wretchedness worthy of a comparison with the metropolis itself, Mr. Lord, a medical practitioner residing at Hampstead, can testify:

"In Flask walk, one of the most public thoroughfares, abutting on the very *parc*, is a row of houses miserably drained and ventilated. In one, on the 9th instant, a poor woman was confined, and barely escaped puerperal fever. The atmosphere, from cesspool and drain, is most loathsome. A painted chair, which has been left on the ground room, is blackened by the sulphuretted hydrogen escaping through the boards. A tame bird, which had lived a year in another house, died soon after being removed; the cat has died; seven or eight cats have died there. 'Nobody can keep their cats alive there.' The man, a shoemaker, works at his trade, and smokes tobacco to disguise the smell. The rent is 5s. per week. Here the infant was born, and if left, like two of its deceased *brothers*, the pet bird, and the doomed cats, to breathe a slow poison, will pine, suffer, and die. On my noticing the vile stench, the patient, resigned mother answered, 'It is nothing to what it is when shut up at night.'<sup>77\*</sup>

*Brentford*—Next in order to the metropolis, will naturally rank the metropolitan county. The following passage relates to Brentford, Middlesex, and is from the pen of Mr. H. Brooke:

"Nearly opposite my house is a court, or alley, measuring eleven feet wide; it contains ten houses; each house has two rooms, both in front, eight feet square; there is no window or ventilation of any kind at the back, neither yard, court, nor garden; in each of these houses are located one or two families, numbering from five to eight persons, men, women, and children; opposite and along the whole length of the alley is a wall eight feet high, which effectually excludes the air; in the middle is a large dusthole, into which is thrown every kind of filth and refuse, and which often remains unemptied for weeks together; a dirty gutter runs the whole length, and at the bottom of it is a hole, which, if clear, communicates with the main sewer, but is frequently choked up, at which time the stagnant filth emits the most disgusting odour, particularly previous to a shower of rain, or wet weather; in the middle of the alley is an open privy, overflowing with human excrement; close by yawns an open shore or gully-hole, the receptacle of an extensive butcher's slaughter-house, into which the blood and offal of every description flow; pigsties, with hogs wallowing in dirt, fill up the sickening picture. To breathe this pestilential air, to inhale the poisonous vapours emitted from this accumulation of decomposed animal and other matters, hundreds of human beings are inextricably doomed, and that which adds greatly to their sufferings is, that they have no water to flush the court, cleanse the gutters, or wash the rooms, but what is obtained from the town pump, which is situated at some distance, and sometimes out of repair; and this state of things exists in a town running parallel with the Thames, and close to the Middlesex Waterworks, where abundance might easily be obtained, and at little cost."<sup>78</sup>

—The sanitary state of the large manufacturing and commercial cities of the north has been so minutely described in the Reports of the Health of Towns Commission, that it will not be necessary to enlarge on that subject in this place. Dr. Watson, of Liverpool, in a series of papers published in the "*Provincial Medical and Surgical Journal*," and since reprinted in a separate form,<sup>†</sup> gives a minute account of the epidemics of 1844, from which the following passage is extracted:

"The old fever district is situated in the lowest parts of the town, not only as to topographical position, but also as to sanitary conditions. It is the worst ventilated, the streets being narrow, and the courts being frequently terminated in a *cul-de-sac*; drainage is imperfect; the houses are often crowded with so-called 'accommodations for travellers,' which signifies a low, damp cellarage, with a floor covered at night with straw, wherein are contained night-lodgings for multitudes of human beings, who are huddled together irrespective of the common

\* Letter to Sir Thomas Maryon Wilson, Bart., Lord of the Manor of Hampstead, &c., by Charles F. J. Lord, Member of the Royal College of Surgeons, &c.

† Sanitary Condition of Brentford, Middlesex, by H. B. Brooks, Esq. "*Health of Towns Journal*," No. 1.

‡ Some account of the Epidemic Fever which prevailed in Liverpool in the latter months of the year 1844, by Geo. Churchill Watson, M. D., Edinburgh.

moralties of life. The numbers thus slenderly 'accommodated' soon render the atmosphere of such a low-roofed den absolutely irrespirable for any one unaccustomed to breathe such pestilential air." On the other hand, the district designated as the "new fever district," seems, in parts at least, to have presented none of the characters comprised in the foregoing quotation. Speaking of Everton and Kirkdale, which are comprised in this district, Dr. Watson says: "The majority of fever cases was situated on the higher part of Everton, a few under the brow of the hill and sheltered from the east. No cases occurred in courts, and in almost every instance there was the greatest cleanliness existing in the family, and nothing in the immediate neighbourhood to engender fever." There was a remarkable difference in the symptoms of the fever as it occurred in one or the other of these situations. We are told that "in the higher parts of Everton, the prevalence of thoracic symptoms was more marked than that of abdominal ones: down in the more sheltered and crowded parts of the town, the abdominal symptoms were most prominent; in other words, that whilst diarrhoea was an exception in the exposed district, it was the general rule in the less ventilated and more populous parts. The sanitary condition of the latter was found by experience to preclude depletory measures in this instance as decidedly as in the common typhoid fever, which is always more or less present in these lower regions." This statement is in accordance with the general experience of our large towns, in which fever seems to be assuming a lower and lower character as they become more and more crowded, without at the same time undergoing any improvement in their general condition in other respects.

—The following note of the Registrar of St. George, Manchester, given in the report for the quarter ending March 31, 1847, serves to show how little the state of things in our large cities has been altered since the Reports of 1844:—

"From the peculiarity of the districts, fever and other epidemics are rendered more fatal than in most others: the poor dwelling in narrow streets and damp cellars, where scarcely a breeze of fresh air visits them, and being so densely crowded, it cannot be matter of surprise that the ravages of death are so fearful. The Registrar had occasion personally to inspect some of their dwellings; one cellar consisted of two compartments, each measuring 4 yards by 4. In the first, the family of the house consisted of 7 persons; in the other, the back apartment, were no less than 20 persons, 12 adults and 7 children, and in the corner, the dead body of the child he had come to visit. In the last report he stated something of the overcrowded state of the low lodging-houses; but he had no idea of the real extent of the evil till he had witnessed it."

—The following passages from the pen of Dr. George Robinson, of Newcastle-on-Tyne, will give a very accurate idea of the structural arrangements, and sanitary condition of certain parts of that flourishing port:—

"In the Dock-house entry, in a room on the second floor, no less than six persons had recently been attacked by fever, and beneath this room is an old wooden donkey-shed, used as a receptacle for filth, from which the most offensive effluvia constantly escape. The cellars of other houses in the same court are occasionally filled with the refuse water from the adjoining gas-works, and the tenants describe the stench as most noxious. Several cases of fever were also found in the White Boar entry, which is in some parts not above four feet wide, and the floor of which is about eighteen inches above that of the lower tenements entered from it."<sup>\*</sup>

"In Dean yard, High Bridge, which is within a dozen yards of Grey street (the handsomest street in the town), and which contains a common lodging-house and several tenemented houses, a cellar under one of the latter is used as a receptacle for ashes and every description of filth: and as if this were not a sufficient source of atmospheric pollution, several pigs are kept in the same hole. It is scarcely necessary to add, that several cases of fever, one at least terminating fatally, have within the last few months occurred in this court."<sup>†</sup>

"Perhaps the most fearful illustration of the suffering and disease to which the

\* The Sanitary Condition of Newcastle-on-Tyne, by Geo. Robinson, M. D. "Health of Towns Journal," No. 1.

† Ibid.

poor are subjected from the want of proper superintendence, was furnished by Mount Pleasant, a steep bank, forming one side of a narrow, densely populated ravine near the quay; on the very summit of the hill is an open space, the sides of which are occupied by a large number of piggeries, and in close contact with these undrained filthy sties, are several tenemented houses, the lower rooms of which are considerably below the level of the accumulated refuse.

"We found that the inhabitants of these rooms (the back walls of which are rendered constantly damp and offensive by the oozing through of the foul liquid from above) had suffered severely from fever." In nine rooms visited in Craig's court, which is situated on the summit of the hill, and in immediate proximity to the piggeries, the inspectors found that in three months 50 cases of fever, and five deaths had occurred in a population of 55 inhabitants. "This abode of wretchedness and disease is in the parish of All Saints, and, it may be added, that Mr. Newton, the surgeon in charge of the poor of this district, is at the present moment (Oct. 7th) labouring under severe typhus; his assistant died last week from the same cause, and the relieving officer, whose life was at one time despaired of, is but slowly recovering from a similar attack."<sup>7</sup>\*

—The sanitary condition of Sheffield has been lately explored by order of the authorities—with what result the following quotations will show:

"Another privy in Court 3, Edward street, is placed in such a situation, that it drains and evaporates into the adjoining houses, and is a source of constant disease. Fever is here very prevalent among children, three of whom have died within a very short period, and many others have been afflicted. Ten children out of a family of fourteen, have died in the house nearest to the privy, and of the four survivors, none were born during their residence here. The Asiatic cholera was also very bad in this yard, and three cases of death occurred."<sup>7</sup>†

"In Charlotte square, and Forty row, the houses of which are but two stories, with two low, ill-ventilated, and, in many cases, filthy rooms, the privies, intended for the accommodation of ten families each, are placed so near the houses as to be a nuisance to all who reside in them. Several receive their drainage or evaporation, and the occupiers suffer as usual. Fever prevailed here last autumn to a considerable extent, and several deaths occurred."<sup>7</sup>‡

"There is scarcely a yard of ground in this level district (Sylvester lane and Sylvester gardens) which is not covered with filthy water from the houses or privies. The very foundations of the houses are saturated with it. If there is any locality in the borough where a main sewer is absolutely required, it is here; for the utter absence of drainage, and neglect of the commonest sanitary measures, appear to have led to more epidemic disease than we have met with elsewhere. There is fever at the present time, and the inhabitants state they are never free from it. The first case of Asiatic cholera occurred here, and there is every reason to believe it to be the most unhealthy locality in the town."<sup>7</sup>§

"Bright's yard, in which scarlet fever prevails, and in which six deaths have occurred in less than twelve months, contains an immense quantity of night-soil and ashes (the accumulation of two years), which prevents all access to the privies, which also, from want of being periodically emptied, empty themselves, and spread half over the yard."<sup>7</sup>||

"Court 5, Pea-croft, is exceedingly close, the rooms of the houses low, dark, and ill-ventilated; a privy here, which is perfectly full, is exceedingly offensive, and the house drains are bad. Eighteen persons were all recently afflicted with fever in this yard at the same time, and on two occasions during the last 50 years, every inhabitant suffered from the same disease. One tenant has lost the whole of her children, nine in number, during her residence here. Court 2, Pea-croft, is also in a similar condition to the above, rooms in houses exceedingly low, and eight cases of fever here at present."<sup>7</sup>¶

—The Registrar of the Abbey registration district, Bath, in his Report for the quarter ending Sept. 30, 1847, says:—

\* The Sanitary Condition of Newcastle-on-Tyne, by Geo. Robinson, M. D. "Health of Towns Journal," No. 1.

† A Report on the Sanitary Condition of the Borough of Sheffield, by James Heywood, Professional Chemist, and William Lee, C. E.

‡ Ib.

§ Ib.

|| Ib.

¶ Ib.



"Typhus is still prevalent, but confined to one or two districts. viz. a row of houses built back to back, the lower floors below the bottom of the adjoining canal, and the north side of Castle Foregate, which consists of many lodging-houses, situated in close passages and in small squares, having entrances under archways, and frequently having pigsties and open privies, and heaps of ashes within a few yards of the doors. The cases of typhus have, nevertheless, generally done well, only three deaths having occurred in this quarter."

—Lynn Regis, East Retford, and Canterbury furnish subjects for description in strict keeping with those just adduced.

"Within a space of 100 yards square, and constituting the following places, Chapel lane, North end, and yard, North street, Pilot street, St. Ann's street and fort, with a yard there, the disproportionate number of 57 of the whole number of 87 deaths from small-pox occur. Nine deaths out of 16 in the whole district happened from convulsions, in four of the places named, and occupying a space scarcely half the size of that referred to. So in proportion to the whole number of 187 deaths in the district, no fewer than 91 occurred in the limits alluded to from small-pox."

"New Conduit street and South Clough lane are on either side contiguous to the fleet running by Purfleet street, and here the greatest number of deaths from small-pox occurred. As with the streets, so with the yards, 19 deaths out of 51, from small-pox taking place within them."\*

"A large open common sewer existed at the end of Sutton's row, which was most offensive, and it was predicted by the medical gentlemen of the town, that should this fearful scourge (cholera), visit Retford, this ill-drained, ill ventilated, and densely populated place would prove its advent. At length the fearful reality appeared. On the 19th of July, 1832, a labourer residing in this locality was attacked, and died.

"During its five or six weeks' continuance in the town, there were 51 cases reported, of which 13 died and 38 recovered. *With one or two exceptions, the malady was altogether confined to Sutton's row.*"†

"The dwellings of the poor are generally built very close together, without either garden or yard to them; they are not provided with underground drainage, nor a proper system of ventilation, and are constantly damp, and extremely unhealthy. From three to four shillings a week is paid as rent for the cottages, and from one shilling to one shilling and sixpence for the single room.

"There are no underground dwellings in Canterbury, but the poor generally are very badly supplied with lodging. One or two examples will be sufficient to prove the truth of this assertion. In St. Gregory's square, in the parish of Northgate, there are 39 adult persons and 43 children residing in 26 rooms; it is not drained, and it has but one pump and one privy for the use of all the inhabitants. In another small space, and close to the parish church, are 17 families inhabiting 15 dwellings, in 13 small houses; these persons have no supply of water, except from a distance; they have no drainage, and but one privy, the cesspool of which has not had a covering for several years. Several parts of St. Alphege, St. Peter's, St. Mildred's, and Westgate are in the same condition."‡

—The sanitary condition of the town of Reading has been minutely examined and reported upon. The leading results will be found in a condensed form in the pages of the "Statistical Journal," § and in the speech of Mr. Samuel Warren, delivered at the Town Hall, Reading, Feb. 4, 1847. The following passage, extracted from that speech, appears to present a faithful picture of the state of things in this town:—

"In nineteen-twentieths of the whole borough there is no drainage of any description, but the sulliage of the premises is deposited in cesspools for the purpose of percolation in the surrounding soil. The town may, therefore, be viewed as a

\* An Inquiry into the Sanitary State of the Town of Lynn Regis, by George Sayle, Surgeon.

† Facts which prove the Immediate Necessity for a Measure of Sanitary Reform, by John Charles Hall, M. D.

‡ The Sanitary Condition of Canterbury, by George Rigden, Surgeon.

§ Statistics of the Sanitary Condition of the Borough of Reading, by John Billing, F. S. S., Architect. "Journal of the Statistical Society," Aug. 1847.

vast receptacle of refuse of every description. As a natural result, the earth is saturated to considerable distances; the water of the wells is frequently rendered impure; and the cesspools require to be constantly emptied. It is often found that the cesspools are under the floors of the houses, and at the time of their being emptied they become the source of universal annoyance. In those parts of the town where the land-springs abound, as in Prospect street, the cesspools require attendance more frequently. These evils are daily increasing in magnitude, as the various strata upon which the town is built become filled with impurity."

—The most recent, as well as one of the most striking, exposures hitherto made of the condition of our large towns, and of the fearful amount of disease which it entails, is given by Dr. Dehane, in the case of Wolverhampton.\* Speaking of a district occupied chiefly by a migratory population of Irish labourers, he says:—

"In this district, a few hundred yards only removed from the collegiate church, and known by the several names of the Caribee Island, Colis Croft, Castle place, and the Back lane, all in the neighbourhood of Stafford street, are huddled together many scores of miserable habitations, totally destitute of any drainage, and where the filthy surface-water is permitted to lay in pools until it becomes putrid, emitting very offensive and noxious exhalations, while the immediate neighbourhood generally presents a most disgusting accumulation of filth and rubbish, in the shape of dunghills and unemptied privies, frequently overflowing with their fetid contents. . . . The buildings are of the most squalid description, containing a population of frequently ten or twelve in a room, without either beds or even the commonest article of furniture. Here are found congregated a mass of men, women, and children, principally from the sister island, in every stage of rags and destitution. Even water, that commonest necessary of life, is wanting, there being scarcely a pump in the whole district, so that cleanliness is out of the question, were they even inclined to practise it. . . . .

"The population of the district, which is of a migratory character, and fluctuating in its numbers, may be from about 1100 to 1500, and is chiefly composed of Irish labourers and their families, driven here by the late scarcity in their own country, with the view of begging or obtaining such employment as the town and neighbouring works afforded. . . . .

"During the past twelve months 600 sick persons have been removed from that district to the union-house: of these, nearly the whole have been cases of fever, of which fifty have proved fatal, the remainder having been discharged more or less improved in their health; but it was speedily found that a large proportion of those who had been discharged, upon returning to their former habitations, were again seized with fever, and consequently returned to the union. In addition, seventy-eight cases of fever were attended during the last half year at the patients' dwellings in the district, and eleven of these cases proved fatal; these facts distinctly showing that the disease was fostered and kept up by the want of proper sanitary regulations in the quarter alluded to.

"The whole number of fever cases removed from the union to the town during the past year was about 1000; while from the Stafford-street district alone, as before stated, nearly 700 of these cases were received. . . . .

"The total population of the town is about 40,000, that of the district in question 1400; but, owing to its migratory character, if we quadruple or quintuple its amount, which perhaps will bring the number somewhat above the reality, or if we suppose the whole population to be changed four or five times in the course of the year, we shall have an aggregate of 5600 or 7000 persons. Deducting the larger number of 7000 from 40,000, the presumed population of the town, 33,000 will remain. The total number of fever cases is, as near as possible, 1000; of these 400 have come from the other parts of the town, and about 600 from the locality in question; or, in other words, among 33,000 persons in one locality, there have been 400 cases of fever; while among 7000 persons in another locality, the floating population referred to, there have been no less than 600. The difference is enormous, and presents a striking illustration of the necessity of the rigid application of sanitary regulation to the houses and neighbourhoods inhabited by the poor.

\* Sanitary Condition of a District in Wolverhampton, by J. Dehane, M. D. "Journal of Public Health," No. 11, p. 39.

There can scarcely be any necessity to advert to the amount of suffering, and the expense incurred. In the case before us, 600 persons out of 6000 or 7000, or about a tenth, have suffered from disease, and by inability to labour, become a charge to the community."

The quotations from the more recent sanitary reports which are here brought together, reveal a condition of things in our towns of which even many medical men are unconscious; at the same time the coincidence of municipal neglect with the prevalence of disease, may furnish even to the members of the medical profession new and convincing proofs of the position put forth by the advocates of sanitary reform, that a vast amount of existing disease admits of prevention. Though fever may and does prevail occasionally in the better parts of our large towns, it is a comparatively rare visitation; but in such districts as those described in the foregoing extracts, it is not merely an occasional visitant, but takes up its abode in them, and, in common with small-pox and other eruptive diseases, with diarrhoea, dysentery, and the entire class of zymotic disorders, is always present when the weather and season are favourable. It is in such districts, too, that Asiatic cholera usually makes its first appearance. This fact is of so much importance, especially at the present time, that it deserves to be examined by itself. The recent publication of the First Report of the Metropolitan Sanitary Commission has furnished ample materials for the elucidation of the local predisposing causes of cholera, and incidentally of fever, as well as of their coincidence with each other. These will therefore be considered in a distinct section.

#### § IV.—*Sanitary Condition of Villages.*

The Report of the Health of Towns Commission, and the several works recently issued from the press, contain, as might be anticipated, little or no information on the condition of small towns and villages. Such information is obviously only to be obtained from publications of an ephemeral nature, or from reports of a strictly local character, published, for the most part, in provincial newspapers. From one or two of these, which are now before us, it may be useful to make a few extracts. For the following account of a fever which raged in Hunmanby and the neighbourhood, the profession is indebted to Dr. Laycock, the honorary secretary and active promoter of the York Health of Towns Association.\*

The Report begins by stating, that "the disease is probably the same which was so prevalent in Latherthorpe two years ago, and which was spread over almost the whole of England, infesting both towns and rural districts. It is almost, if not altogether, identical with a fever not long ago extremely prevalent in the large towns of Scotland, from whence it probably passed into England.

"It appears, from the statement of a trustworthy correspondent, that the disease first appeared at Hunmanby in August last, and prevailed more especially amongst the population resident in badly-constructed tenements, built upon soft ground badly drained, with neglected privies and drains behind. In these localities the disease was fearfully propagated, and assumed a type more intractable than in more favoured situations. There were also cases of the disease in the out farm-houses situate in airy and dry situations. From 180 to 200 persons were attacked at Hunmanby, and 20 have died out of a population of 1200.

"At Reighton, a small village three miles from Hunmanby, there have been thirty cases. Here there is a nasty marsh, with a dirty, foul pond close by, fed from some farmyards above with a quantity of offensive fluid. All the thirty cases of fever occurred in close vicinity to this pool or marsh, while the upper portion of the village has been totally exempt from the epidemic. It has also prevailed in other villages, namely, North Burton, Muston, and Flixton."

Dr. Laycock, in a letter addressed to the gentleman from whom the foregoing information was obtained, proceeds to make the following observations:

"It is a remarkable circumstance that so many of our pleasant English villages suffer so severely from typhus fever; we are, I believe, far more exempt from this sad affliction in York than the rural population around us, and the fact has been quoted as showing that pure air and good ventilation do not influence the progress

\* Published in the *Yorkshireman*, Feb. 6, 1847.



of epidemics. Yet repeated and careful inquiries, as well by others as on my own part, have most clearly shown that the propagation of these infectious fevers is very much facilitated, and their fatality very much increased, by those sources of miasma which you pointed out. There can, I think, be no doubt whatever, in the minds of those who have carefully investigated the matter, as to the truth of this principle. Your observations as to the locality of Hunmanby, in which the fever assumed a more intractable form, and of Reighton, in which it prevailed more especially, are quite confirmatory of this point. They are also confirmatory of the idea which is gradually being adopted, namely, that it is a mere assumption, and altogether contrary to the fact, to say that the rural labouring population have pure air and good ventilation in their houses. On the contrary, it is now believed that thousands of our village population are in as bad a condition in these respects as the working classes of large towns. Even farmhouses are not exempt from these evils. . . . I believe that few farmers are aware that the plan adopted by many, of leaving their straw (mixed with the dung of their cattle) to rot and become manure in a yard situate close to their premises, is the surest method they could devise of predisposing themselves and their servants to suffer severely from such an epidemic as the one in question. Where you have a quantity of straw rotting you must necessarily have an evolution of noxious gas. Flax lying upon flax-grounds in open, dry, and sandy situations, has been known to cause fever. Now in a farmyard where straw and dung are decaying together, you have an ample source of miasm, even if situate in a high and dry situation; and if the drainage from such yards is allowed to run along in an open channel, or into open ditches near to dwellings, you have the sources of miasm still more widely extended."

The reply to this communication confirmed the fact, that it is too general for the farmhouse to be close by the yard where there is a large dungheap, and too often there is a pool or deposit near the back door, which is not only a receptacle for what drains from the dungheap, but receives also the washings of meat and vegetables from the back kitchen.

It appears, also, that some of the labourers' cottages in some villages are sadly deficient in all that contributes to health and comfort. At Reighton this is particularly the case, no trouble being taken to repair the cottages. The erection of dwellings for the rural labourers has fallen into the hands of the small proprietor, who builds with the sole intention of realizing a profit from the investment of his capital, regardless of the health and comfort of the inmates.

A similar condition of the rural villages in Somersetshire, and with a similar prevalence of fever, has been set forth in a series of letters published in the "Bridgewater Times" during the month of January of the present year. The communications are of too controversial a character to admit of quotation, but they reveal a very disgraceful state of things, and one demanding government interference and surveillance to the full as urgently as the state of our large towns. To the neglected state of our villages, and especially to the overcrowding of sleeping-rooms, Mr. Toynbee bears witness in a recent publication;\* and Mr. Chadwick, early in the present year, traced this great evil, with his usual ability, to the operation of the present unwise law of parochial settlement, which offers irresistible inducements to the destruction of existing cottages, raises up serious obstacles in the way of the building of new ones, and leaves the agricultural labourer no option but the unhealthy suburbs of large towns, oftentimes several miles distant from his place of work. The effect of such a state of things upon the sanitary condition of the labourers in the rural districts is most disastrous. A few extracts from Mr. Chadwick's able address to the members of the Farmers' Club on this vital question will repay perusal, and may serve to draw the attention of the country practitioner to a very fruitful source of disease.

"The lower districts of Reading were severely visited with fever during the last year, which called attention to the sanitary condition of the labouring population. I was requested to visit it. Whilst making inquiries upon the subject, I learned that some of the worse-conditioned places were occupied by agricultural

\* Journal of Public Health, No. ii, p. 47.

labourers. Many of them, it appeared, walked four, six, seven, and even eight miles, in wet and snow, to and from their places of work, after twelve hours' work on the farm. Why, however, were agricultural labourers in these fever-nests of a town? I was informed, in answer, that they were driven in there by the pulling down of cottages, to avoid parochial settlements and contributions to their maintenance in the event of destitution. Amongst a group, taken as an example there, in a wretched place, consisting of three rooms ten feet long, lived Stephen Turner, a wife, and three children. He walked to and from his place of work, about seven miles daily, expending two hours and a half in walking before he got to his productive work on the farm. His wages are 10s. a week, out of which he pays two for his wretched tenement. If he were resident on the farm, the two hours and a half of daily labour expended in walking might be expended in productive work; his labour would be worth, according to his own account, and I believe to a farmer's acknowledgment, 2s. 6d. per week more. For a rent of £5 5s., such as he now pays, he would be entitled to a good cottage with a garden, and his wife and children being near would be available for the farm labour. Why then should there be this displacement, so injurious to the labourer, and, as it will appear, unprofitable to the farmer? The answer was, it is brought about by the law of parochial settlement."

The following is a striking example of the pauperizing effect of a law professedly enacted for the relief of pauperism.

"A man belonging to Maple-Durham lived in Reading, walked about four miles per day to his work, the same back, frequently getting wet, took fever, continued ill some time, assisted by the Reading union in his illness; recovered, and could have returned to his former employment of 10s. per week, but found he was incapable of walking the distance; the consequence was, he took work that only enabled him to earn 5s. per week; he is now again unable to work."

The extent of this great evil in a single neighbourhood may be judged of from the statement of Mr. Chadwick, that "so far as he could learn, there are between one and two hundred agricultural labourers living in the borough of Reading, and the numbers are increasing."

The following quotation will serve to show, that the vicious operation of this unhappy law is not confined to one part of the country, and will also prove that medical men are not ignorant of the real state of the case, or indifferent to it.

"Bedford has been severely visited by fever; and it appears, upon inquiry, that agricultural labourers, of whom there are between one and two hundred, are there driven by the operation of the law of parochial settlement to reside in some of the over-crowded ill-conditioned districts. These too have to walk to and from their work four, six, and eight miles daily. Mr. Wing, the clerk of the Bedford union, has transmitted to me the following description, by one of the medical officers, of the effects upon the labourers within his observation: 'To persons of sedentary habits,' he says, 'a walk to and from their places of work would be conducive to health. Not so with the agriculturist, who is laboriously occupied from an early hour in the morning till night; and if he is compelled to sally forth (with his bundle of cold provisions for the day) an hour or an hour and a half earlier, and to walk four or five miles, at all seasons of the year, and in all weather, in order to be in the field or the barn at the same time with his fellow-labourers on the spot, his sleep is prejudicially curtailed, and he is, in the long run, predisposed to the inroads of disease. I have repeatedly observed the ill effects of this daily extra exertion and curtailment of rest, and have often, in cases of convalescence under these circumstances, found it necessary to advise men not to resume their work so soon, by two or three weeks, as they otherwise would have done. One case to the point particularly recurs to my mind of a man who lived at a distance of three miles from his work, and had recovered from fever; two other members of his family were also labouring under the disease, and he was anxious to return to his work in order the better to provide for their wants. He procured my reluctant consent. Within a fortnight he was seized with a relapse of the disease, through which he struggled difficultly with his life; and I have no doubt that the early and late walks in the winter season, with deficient rest, mainly contributed to produce the second attack, to say nothing of their probable predisposing influence in reference to the first. A man having to walk three miles to

his place of labour, and three miles back daily, is equivalent to two hours' extra work. Thus, he must rise one hour earlier in the morning, and be kept from home one hour later in the evening, than if resident in the place where his work is situated; he has also to endure greater fatigue, and of course greater wear and tear of his system." John Freeman states that in hay time he has been obliged to leave home at two o'clock in the morning, and has not returned till ten o'clock in the evening; and that when he has reached his place of work in the morning he has felt as much fatigued as he ought to have done in the evening. Amongst other injuries which this separation from the place of work entails is, diminution of income from non-employment of children. A man living in the place where he works can generally procure employment for boys twelve years old: this he cannot do where non-resident, as boys of that age would not be able to go backwards and forwards and work all the day. Besides these losses he incurs extra expense. A man and family cannot live in Bedford under £5 for rent and taxes of house, whereas at ———, the rent of a house, with a large garden attached, would not exceed 25s. He is thus obliged to fare harder with respect to food and clothing than if living in his village. He is moreover subjected to loss of comfort. He is separated from his wife and children, excepting in the night, and of course is prevented from taking his meals with them, and thus he loses the comforts to be derived from association with his family. This system destroys all sympathy between the employer and the employed, and all identity of interests."

Mr. Chadwick proceeds to show, that this cruel law is in active operation in Lincolnshire, Hampshire, Wilts, Dorsetshire, and Warwickshire; in fact, human nature must be very different from what all experience proves it to be, if there is any county or district free from its degrading, demoralizing, and pauperizing effects.

One more quotation illustrative of this system of overwork is all that our space will allow us to transcribe.

"Near Gainsborough, Lincoln, and Louth, the labourers walk even longer distances than near Reading. I am informed of instances where they walk as far as six miles, that is twelve miles daily, or seventy-two miles weekly, to and from their places of work. Let us consider the bare economy, the mere waste of labour, and what a state of agricultural management is indicated by the fact that such a waste can have taken place. Fifteen miles a day is the regular march of infantry soldiers, with two rest days—one on Monday and one on Thursday; twenty-four miles is a forced march. The man who expends eight miles per diem, or forty-eight miles per week, expends to the value of at least two days' hard labour per week, or 100 in the year uselessly that might be expended usefully and remuneratively in production. How different is it in manufactories, and in some of the mines, or at least in the best managed and most successful of them. In some mines as much as two and three thousand pounds is paid for new machinery to benefit the labourers, and save them the labour of ascending and descending by ladders. In many manufactories they have hoists to raise them and their loads from lower to upper rooms, to save them the labour of toiling up stairs, to economize their strength for piece-work to mutual advantage. The Rev. Frederick Peel, of Gainsborough, informs me—'I have farms under my knowledge where the labourers going to and fro do not walk less than 400 miles a week.'"

The whole subject of the physical and moral effects of the law of parochial settlement, has been most ably and happily illustrated by Mr. Chadwick. Much of it belongs with propriety to the science of hygiene, and as such is here introduced.

#### § V.—Sanitary Legislation.

The last session of Parliament has placed upon the statute book one or two useful acts.

*The Towns' Improvement Clauses Act.\**—This is one of a series of consolidation

\* An Act for consolidating in one Act certain provisions usually contained in Acts for paving, draining, cleansing, lighting, and improving towns. (Anno 10 and 11 Vict., cap. xxxiv, June 21, 1847.)



acts passed in the last session of parliament, with a view of insuring greater uniformity in local legislation, and in order to avoid the incessant and costly repetitions of local acts. The act embraces the important subjects of paving, draining, cleansing, lighting, watching, and improving towns and populous districts. The commissioners constituted under the act are authorized to appoint the following local officers: a surveyor, an inspector of nuisances, and an officer of health; the first and last named officers to be subject to the approval of the government inspector, when such shall be appointed, or of one of her Majesty's principal secretaries of state. The duties to be performed by the officers of health are laid down in the 12th clause, which runs as follows: "The commissioners may, if they think fit, appoint, subject to the prescribed approval, or where no approval is prescribed, subject to the approval of one of her Majesty's principal secretaries of state, a person of competent skill and experience, who shall be styled 'the Officer of Health,' whose duty it shall be to ascertain the existence of diseases within the limits of the special act, especially epidemics and contagious diseases, and to point out any nuisances or other local causes likely to cause and continue such diseases, or otherwise injure the health of the inhabitants, and to point out the best means for checking or preventing the spread of such diseases within the limits aforesaid, and also the best means for the ventilation of churches, chapels, schools, registered lodging-houses, and other public buildings within the limits aforesaid, and from time to time, as shall be required by the commissioners, to report to them upon the matters aforesaid, and to perform any other duties of a like nature which may be required of him; and the commissioners, with the same approval, which is necessary for the appointment of the officer of health, shall fix the salary to be paid to such officer, and shall pay such salary out of the rates to be levied under this or the special act. And the commissioners with the like approval may discontinue such officer, or remove any such officer of health." The act further requires the commissioners to make a map of the district within the limits of the special act, or to obtain such maps from the ordinance surveys. The map to be marked with level lines, and corresponding bench marks to be set up at convenient spots. The commissioners are also to prepare plans of alterations of works, such plans to be deposited in the office of the commissioners. The act further vests all sewers and other works in the commissioners, gives power to purchase private sewers, and to build new sewers where none exist, "and they may also cause such sewers to communicate with and empty themselves into the sea or any public river or watercourse, or they may cause the refuse from such sewers to be conveyed by a proper channel to the most convenient site for its collection and sale for agricultural or other purposes, as may be deemed most expedient, but so that the same shall in no case become a public nuisance;" and with respect to the drainage of houses it is enacted that "if any house or building within the limits of the special act be at any time not drained by a sufficient drain or pipe communicating with some sewer, or with the sea or some public river, to the satisfaction of the commissioners, and if there shall be a public sewer within *one hundred feet* of any part of such house or building, the commissioners shall construct or lay from such house or building a covered drain or pipe, of such materials, of such size, at such level, and with such fall as they think necessary for the drainage of such house or building, its areas, water closets, privies, and offices; provided that the cost of executing such work shall not, without the written consent of the owner, exceed one year's rack rent of such house or building; and the expenses incurred by the commissioners in respect thereof, if not forthwith paid by the owner or occupier, shall be defrayed by the drainage rates hereinafter mentioned." It also enacts that no house shall in future be built without drains, and that when houses are rebuilt it shall be at such a level as to admit of the perfect drainage of the basement. The commissioners may also require the owners of houses to provide privies and ash pits, and where a sufficient supply of water is laid on, water-closets. The drains, privies, and cesspools to be kept in good order by owners, to be subject to inspection, and drains not to be altered under penalty.

With regard to new streets it is enacted that "Every person who intends to make or lay out any new street shall give notice thereof to the commissioners, in order that the level of such street may be fixed by the commissioners," and that persons laying out streets with notice shall be liable to the expenses of subsequent

alterations of levels. The act further regulates the width of new streets, and prescribes as the minimum 30 feet for a carriage road, and for other streets 20 feet. With respect to improving the line of streets it is enacted that houses may be set forward, that the commissioners may purchase houses or ground for effecting additional improvements; that houses projecting beyond the line of street, when taken down, are to be set back; and that future projections of houses, &c., are to be removed on notice. Ruinous or dangerous buildings to be taken down or secured. The expense to be levied by distress on the owner, and if the owner cannot be found, the commissioners may take the house or ground.

With respect to cleaning the streets, it is enacted that the commissioners shall cause streets to be cleansed, and dust and ashes to be removed from the houses. Occupiers to cause the footways to be swept, under penalty; commissioners may compound for sweeping footways; they are also to appoint scavengers for sweeping, cleansing, and watering the streets, &c.

With respect to the prevention of nuisances, the act contains several excellent provisions. It imposes penalties for neglecting to remove waste or stagnant water in cellars or other places within houses after receiving notice from the commissioners to remove the same, and for allowing the contents of any privy or cesspool to overflow to the annoyance of the occupiers of any adjoining property. The commissioners may also drain and cleanse out any stagnant pools, ditches, or ponds of water, and abate any such nuisance, the expenses to be paid by the person committing such offence. It also contains regulations to prevent the accumulation of dung, and, on certificate of the officer of health, authorizes filth to be removed and houses to be whitewashed and purified.

With respect to burying the dead, it enacts that no interment in any grave shall be made without leaving two feet six inches clear of soil above the coffin. Justices may order nuisances to be abated under penalty of 5*l*.

The important subject of ventilation is not overlooked; for it is enacted that places for public meetings are to be constructed with the approbation of the surveyor; that houses are not to be built in close courts, that cellars in courts are not to be occupied as dwellings; that cellars, though not situated in courts, are not to be let for dwellings unless 7 feet in height from the floor to the ceiling, one third of the height being above the level of the street. The commissioners are to keep a register of lodging-house keepers, and to make rules for promoting cleanliness and ventilation, to be enforced by penalties. The commissioners are also empowered to make arrangements for lighting streets. The water supply is also placed under their control; they may construct public cisterns and pumps for supplying water to baths and wash-houses; they are to cause fire-plugs to be provided and maintained; they may also contract for a supply of water. New works are not to be constructed without the approval of the Commissioners of her Majesty's Woods and Forests, or such other superior authority as may hereafter be established. The act further authorizes the commissioners to license and inspect slaughter-houses, requires that existing slaughter-houses shall be duly registered, forbids the erecting of new ones without a license, and empowers the commissioners to make by-laws for their regulation. Places for public recreation, for bathing, and drying grounds, and baths and wash-houses may be provided. There are some excellent provisions in the act relating to the mode of levying rates, of which the most important is that which spreads the repayment of money raised upon mortgage over 30 years. The rates to be paid by the occupier, except in certain specified cases. There are many minor provisions of the act which it is not necessary to give in detail. On the whole it seems well calculated to answer the purposes which it has in view, to furnish model clauses for future local acts, should such unfortunately be required. It is, however, to be hoped that its principal provisions, embodied in the act promised after the recess, may become the law of the land, and lead to those reforms in all our towns which are so urgently required.

*Act for the Removal of Nuisances and the Prevention of Contagious and Epidemic Diseases.\**—This temporary act, which expires at the end of the present session

\* An Act for the more speedy removal of certain nuisances, and to enable the Privy Council to make regulations for the prevention of contagious and epidemic diseases until



of parliament, is a good example of well-intentioned but comparatively inefficient legislation. It has led to the suppression of some nuisances, but has amply demonstrated the necessity for a more comprehensive and stringent sanitary measure. It provides "that it shall be *lawful* for any town council or other like body having jurisdiction within any corporate town, borough, city, or place, or any trustees, or commissioners, or other like officers acting under the provisions of any act of parliament for the drainage, paving, or cleansing, or managing or directing the police, in any town, borough, city, or place, or for any of the above purposes, or for commissioners acting under the provisions of an act passed in the ninth year of the reign of his Majesty King George the Fourth, intituled an act to make provision for lighting, cleansing, and watching cities, towns corporate, and market towns in Ireland, in certain cases, or in case there shall be no such town council or other like body, or no such trustees or commissioners having jurisdiction or acting as aforesaid, in any town, borough, city, or place, then it shall be *lawful* for the guardians of the poor, upon receiving a certificate in writing, signed by two duly qualified medical practitioners, of the filthy and unwholesome condition of any dwelling-house or other building, or of the accumulation of any offensive or noxious matter, refuse, dung, or offal, or of the existence of any foul or offensive drain, privy, or cesspool, to lay a complaint before any two justices of the peace, and such justices, upon the production of such certificate as aforesaid, shall forthwith summon the owner or occupier of the premises described in such certificate, to appear before them or some other justices to answer the matters of complaint alleged in such certificate, and if such owner or occupier shall not appear at the time and place named in such summons, or having appeared, shall not show sufficient cause to the contrary, or if there is no owner or occupier, or if it appears that no owner or occupier can be found, and upon proof that a copy of the said summons was left on the premises in the summons mentioned, then in either of the cases aforesaid such justices upon proof to their satisfaction of the existence of the nuisance in the said certificate described, shall forthwith make an order in writing under their hands and seals for the cleansing, whitewashing, or purifying of any such dwelling-house or other building, or for the removal or abatement of the nuisance in the said certificate described, within the period and in the manner in the said order to be prescribed (such period not being more than two clear days, of which *Sunday* shall not be one, after notice of the making of the said order has been given in pursuance of the provisions of this act), and such order, or a true copy of the same, shall be forthwith served upon the owner or occupier respectively of the premises or place mentioned in such order, or if there be no such owner or occupier, or if such owner or occupier cannot be sued, then such order, or a true copy thereof, shall be forthwith affixed upon some part of such premises or place as aforesaid; and if the dwelling-house or other building in the said order mentioned shall not be cleansed, whitewashed, or purified, or if the nuisance in the said order described shall not be removed or abated within the period and in the manner in the said order mentioned, it shall be lawful for the persons who made the complaint, and who shall be authorized by the said justices so to do, by themselves, their servants, and others, to enter any dwelling-house or other building or place in the said order mentioned, to cleanse, whitewash, or purify such dwelling-house or other building, or to remove or abate the nuisance in the said order described." The act further imposes a fine not exceeding 10*l.* or less than 2*l.* on any party wilfully obstructing the parties empowered to remove nuisances, provides for the recovery of the expenses incurred from the owner or occupier of the premises, adapts itself to the different circumstances of Scotland, gives powers to the Privy Council in England and Scotland, and the Lord Lieutenant and Privy Council in Ireland to issue orders at any time to prevent the spreading of contagious or epidemic diseases, and excepts from the operation of the act those places in which a medical officer of health and an inspector of nuisances has been or may hereafter be appointed under any local act passed in the current session of parliament.

One defect of the act is indicated by the word *LAWFUL*. The act is *permissive*, the thirty-first day of August one thousand eight hundred and forty-seven, and to the end of the then next session of parliament. (August 28, 1846.)



not compulsory; that is to say, it is permissive as far as the authorities are concerned, and only compulsory on the owner or occupier of the dwelling or nuisance. As a matter of course, the act provides no payment for the medical man. His duties, as usual, are to be gratuitous. It appears that the act has been inoperative in one town (Tynemouth) because there is only *one* magistrate resident in the borough, whereas the act requires *two*, and because the commissioners under the North Shields Improvement Act are too large a body, and hold their meetings at periods too remote; in another town (Bath) because having the apparent advantage of more than one of the authorities specified in the act, the said authorities cannot agree as to which should undertake the prescribed duties. The act has not been altogether inoperative; but its chief value consists in the demonstrative proof which it affords of the inadequacy of *permissive acts of parliament*, the indifference of local authorities, and the imperative necessity of one comprehensive, practical, stringent sanitary act.\*

*Amended Passengers Act.*†—This act extends the operation of the passengers act (5 and 6 Vict. c. 107) to *every* ship carrying *any* passenger, instead of limiting it to vessels carrying more than thirty passengers, but with certain provisos, for which the reader is referred to the amended act itself. The clauses which especially refer to the preservation of health are the second, third, fifth, and ninth. The second clause empowers the "emigration officers" to substitute other articles of diet for those named in the first act; the third clause provides that all articles of food required by the act shall be furnished at the expense of the owners or charterers, and shall be of good quality; the ninth clause relates to the replenishing of provisions by ships putting into any ports of the United Kingdom; and the fifth clause lays down regulations for ensuring proper light and ventilation. As this clause is important, it is here given *in extenso*: "And be it enacted, that for the purpose of ensuring a proper supply of light and air in every ship carrying on any such voyage as in the said recited act mentioned, a greater number of passengers than in the proportion of one passenger to every twenty-five tons of the registered tonnage of such ship, the passengers shall, at all times during the voyage (weather permitting) have free access to and from the between decks by each hatchway situate over the space appropriated to the use of such passengers: provided always that if the main hatchway be not one of the hatchways appropriated to the use of the passengers, or if the natural supply of light and air through the same be in any manner unduly impeded, it shall be lawful for the emigration officer at the port of clearance, or his assistant, or where there is no such officer, or in his absence, to the chief officer of customs at the port from which a clearance shall be demanded, to direct such other provision to be made for affording light and air to the between decks, as the circumstances of the case may, in the judgment of such officer appear to require, which directions shall be duly carried out

\* The form of medical certificate may be useful during the short time the Act has still to run.

To the Town Council, &c., or to the Guardians of the Poor of the Union or Parish (as the case may be).

We, the undersigned, A B and C D, two duly qualified medical practitioners, residing at (insert name of the parish), having viewed the dwelling-houses occupied by one X Y, (or a certain piece of land near the King's Head public house, or certain premises occupied by one Y Z, as the case may be, describing the premises,) situate in street, in the parish of in the county of , do hereby certify, that the said dwelling-house is in a filthy or unwholesome state [or that there is an accumulation of offensive or noxious matter, refuse, dung, and offal on the said piece of land, or that there is a foul and offensive drain, privy, or cesspool, on the said premises occupied by Y Z, situate, &c., as the case may be.] and that the same is likely to be prejudicial to the health of the occupiers, or of the persons whose habitations are in the neighbourhood of the above-mentioned premises. Witness our hands this day of one thousand eight hundred and

Signed A B.

C D.

Members of the Royal College of Surgeons.  
(as the case may be.)

† An Act to amend the Passengers Act, and to make further provision for the carriage of passengers by sea. (22d July, 1847.) Anno 10 and 11 Vic.

to his satisfaction: and in case of any default herein the master of the said ship shall be liable to the payment of a penalty not exceeding fifty pounds sterling.\*

During the past session, also, some amendments have been made in the Baths and Wash-houses Act. which, however, are not of a nature to require a detailed notice in this place. On the whole, the legislature has evinced a growing appreciation of the importance of sanitary measures, and the value of health and life; and it is to be hoped that it will not allow another session of parliament to pass without enacting a large and comprehensive practical measure, (not *permissive*, but *compulsory*,) applicable to all towns and populous places, and even to rural villages, in the carrying out of which the medical man shall be called upon to take an active part, and for which he shall receive due and fair remuneration.

In the meantime, a very important step has been recently taken in London where the six sewer commissions have been superseded, and a single commission, comprising twenty-three names, most of which have long been associated with the subject of sanitary reform and improvement, has been substituted for them. This act is the first-fruit of the Metropolitan Sanitary Commission, and is in accordance with the suggestions of their first report recently published.

### § VI.—*The Cholera.*

The anticipated approach of this fatal pestilence has, as might be expected, attracted the attention of the press and of the medical profession, and has induced the recently-appointed Metropolitan Sanitary Commission to review the history of its first attack in 1831-2, to reconsider the measures at that time adopted to prevent its approach, and check its progress, to examine the predisposing causes which determined the places and class of persons attacked, and to point out the course to be adopted, with a view, not to prevent its appearance among us, (for that would appear to be a hopeless undertaking,) but should it arrive in England, to disarm it, as far as may be, of its terrors. An abstract of the important evidence collected by the commission, preceded by a brief reminder of the particulars of its first visit, and a short summary of its continental progress, up to the end of November of this year, cannot but prove acceptable to the reader.\*

The cholera appears to have been unknown in Europe prior to the year 1831. It broke out near Calcutta, in the year 1817, when it not only committed fearful ravages in India, but carried off 400,000 persons in Java and Malacca. In the succeeding year, China, the Birman Empire, the Malaccas and the Mauritius suffered severely, and assuming a more northern course, it passed through Persia and Arabia in 1821; appearing, in 1823, at the foot of the Caucasus, and the margin of the Caspian Sea; 1826 witnessed its advent in Siberia, whence it advanced with hasty strides into the interior of Russia. Africa was invaded in the next year, and the disease also was raging at the same time in Egypt. Poland, Galicia, Austria, Bohemia and Hungary suffered in their turn; it reached Prussia in 1831; thence it rapidly traversed the sea to England, passed over to France, and was next seen in the New World. It also passed from Asia Minor to the south of Europe. The number of cases in England and Wales, during the years 1831-2, including London, amounted to 61,051, and of these 40,473 recovered, and 20,578 died; 33 per cent., therefore, or about 1 case in 3, proved fatal. In the metropolis there were 11,020 cases, of which 5745 recovered, and no less than 5275 deaths, being little short of 50 per cent.

The present epidemic, after raging with great violence for two years in Persia, where it was propagated in a direction from S. E. to N. W., towards the end of the summer of 1846 broke out at Tauris and Teheran, and during the autumn advanced within a short distance of the Russian frontiers. On the 16th of November, 1846, cases occurred at the village of Saliany, and also in the same month at Lenkoran, and it is worthy of remark, that these were the places first attacked in 1830. The disease also appeared at Bakrou; and advanced in December to Schémakha, Derbent, and in the month of February, 1847, to the town of Kouba. Its appear-

\* For more full particulars in reference to the epidemic of 1831-2, and the course of the present epidemic, the reader is referred to a paper by Dr. J. C. Hall, in the *Journal of Public Health*, No. ii. p. 32, to which we are chiefly indebted for this abstract.

ance at Saliany and in the district of Talyseh was marked with great malignity. Selecting for its victims those who had but recently recovered from the fever of the country, the cholera almost invariably carried off every patient; nearly 9-10ths dying. After a few weeks, the cases were less violent, and the number of deaths, as compared with that of the patients, was in the ratio of four to five. In the other localities of the Trans-Caucasian provinces, the attacks became less violent, and, without the towns, the disease no longer presented a malignant type. Towards the end of February, all traces of the disease were lost, and hopes began to be entertained that the country was once more free. In the following month, however, it broke out with increased violence, and in April, it began to spread with fearful rapidity, traversing simultaneously three districts, passing to the north, along the shores of the Caspian Sea; to the north-west, in the direction of the mountains; and on the west, towards Tiflis, which it reached on the 17th of May. It appeared on the other side of the Caucasus, on the 24th of May, at Kizliar, whence, re-ascending the Terek, it penetrated to Mozdok; afterwards, at the end of June, to Piatigorsk and to Georgierk, and entered Stavropol in the first week of July.

From the 16th of October, 1846, to the 14th of June, 1847, the Caucasus and Trans-Caucasian provinces reckoned no less than 17,055 cases of cholera, of which 6318 died.

During the first week of July, the cholera made its appearance also in the government of Astrakan. The first patients were attacked on the 3d, in the quarantine of Astrakan, situate about 100 wersts to the south of the city, on an island named Birutchiakossa; on the 4th, cases occurred in the military district, and on the next day, in the third quarter of the city, a Tartar was attacked, and died on the 6th in the hospital. The malady now sensibly spread into the city. Its progress was at first slow, and some difference of opinion seems to have existed as to the true nature of the disease; the majority of the physicians looking upon it as a severe form of the sporadic cholera that annually prevails during the summer months. The number of cases reported from the 4th to the 13th, was 23, and of these no less than 19 died. The majority of those attacked belonged to the lower orders, and it made no distinction of age or sex; the males attacked, however, exceeded the females in the proportion of 5 to 1; adults were more frequently affected than children, and in general, the Mahometans suffered much less than the Russians, the former being much more cleanly in their habits, and very sober and careful in their diet.

It appears that in Astrakan the disease was at first most violent, death frequently ending the sufferings of the victim in a very few hours; in many cases, so rapid was the complaint, that no time for medical assistance was afforded; the powers of life sinking from the first. During the first three days (from the 13th to the 16th or 17th of July) more than one-half died; after this, the disease gradually assumed a more favourable aspect, and the recoveries were more numerous. On the 19th of July, the number of deaths was 137, which, gradually declining, were reduced on the 2d of August to 14.

From an official return of the number of deaths from cholera in Astrakan, from the 4th of July to the 2d of August, it appears that out of a total of 2071 cases, 1223 died, and 848 recovered. Towards the end of October, the cholera reached Moscow, in which city, according to official accounts from St. Petersburg, out of the first 140 cases, 40 had proved fatal; and between Oct. 25th and Nov. 1st, 641 persons had been attacked, of whom 233 had died, being a mortality of little more than one-third. The grand total up to Nov. 1st, was 1197 attacks, and 402 deaths. According to the latest accounts, which, however, may require confirmation, cases had occurred in Vienna and Hamburgh, and at Malta.

The Metropolitan Sanitary Commission have very properly made the Asiatic cholera their first subject of inquiry.\* To this course they were impelled by a consideration of its high mortality when it made its attack in 1831-2, by its ascertained connection with the defective structural arrangements involved in their investigations, by the probability of its again visiting these islands, and by inform-

\* First Report of the Commissioners appointed to inquire whether any and what special means may be requisite for the improvement of the health of the metropolis.



ation received from Sir William Pym, who, at an early stage of their proceedings, attended from the Council Office, and informed them of the advices which had been received from the English Consuls, of the steady progress of this pestilence, precisely upon its former track in 1832.

They immediately called before them medical witnesses who had been in practice in the metropolis when the disease prevailed there, and who were most extensively engaged in attending on the sick, with the view of obtaining information as to the past and present sanitary condition of the people, of the localities in which they reside, of their dwellings, and of other circumstances which appeared to favour the spread of the disease; also as to the effects of the measures both of prevention and alleviation which were then adopted, and the modifications suggested by the experience then obtained.

Concurrently with these inquiries the Commission endeavoured to ascertain the state of information and the practical skill and competence, as exemplified in their works, of the authorities charged with the direction of what all previous inquirers had agreed in representing as the chief means of prevention; namely, the works of draining and cleansing. With this view they examined the chief paid officers of all the Commissions of Sewers, with the exception of that for the city of London.

The first inquiry into which the Commissioners enter has reference to the measures which had been adopted to prevent the introduction and extension of that disease in 1831.

The first act of the government was to appoint, by order of the Privy Council, a Central Board of Health in London; and to issue an order in Council, dated the 20th day of October, 1831, in which they proclaimed the presumed efficacy of the measures of extreme precaution adopted for preventing the introduction of the cholera morbus by a rigorous quarantine, but evincing a well-grounded misgiving as to their ultimate success. This document then went on to speak of strict regulations for ensuring non-intercourse of infected with healthy districts, hinting at the possible necessity of military and police *cordons sanitaires*, to order the setting apart of one or more houses in each town or its neighbourhood, as places to which every case of the disease, as soon as detected, might with consent of friends, be removed; and in a word, adopting most of the precautions so rigidly enforced during the prevalence of the plague.

In the meantime the removal of filth of every description, extreme cleanliness and free ventilation, burning of decayed articles, such as rags, cordage, papers, old clothes and hangings; and the purification of clothes and furniture by copious effusions of water, and boiling in a strong ley, were enjoined.

The Central Board of Health, however, had been in existence less than one month when, in consequence of information transmitted to them relative to the progress of the cholera in various parts of Europe, but more especially guided by the conclusions to which Drs. Russell and Barry had arrived, after a five months' careful and laborious observation of the character of the disease in those parts of Russia which they visited, issued a circular, dated Nov. 14, 1831, in which they strongly deprecate all measures of coercion for the purpose of ensuring non-intercourse, adding, "that, under proper observations of cleanliness and ventilation, this disease seldom spreads in families, and rarely passes to those about the sick, unless they happen to be particularly predisposed," so that it will not be necessary, "where there is space, and where due attention is paid to cleanliness and purity of air," "to separate members of families actually affected by the disease, nor to isolate individual houses, unless in cases of crowded, filthy, badly-ventilated habitations, and other contingencies which involve the health and safety of all."

The circular then went on to prescribe the formation of District Boards of Health, each to consist, if possible, of a resident clergyman, and a number of substantial householders, and of one medical man at least. These Boards to be charged with the following duties in their respective districts, viz.:

"1st. To appoint inspectors. Each inspector to visit daily, and to inquire carefully after the health, means of subsistence, cleanliness, and comforts of the inmates of, say 100 houses (more or less), according to local circumstances. 2d. To receive and examine the reports of these inspectors, which should be made up to a given hour on each day. 3d. To endeavour to remedy, by every means which individual and public charitable exertion can supply, such deficiency as may be

found to exist in their respective districts, in the following primary elements of public health, viz. the food of the poor, clothing, bedding, ventilation, space, cleanliness, outlets for domestic filth, habits of temperance, prevention of panic. 4th. To report to their principal Boards respectively on the above heads, as well as on the actual state of health in their districts."

The Board further recommended that when a family was reported to be in an unhealthy state, and the disease was confirmed to be cholera by a medical member of the District Board, that the head of such family, if unable to afford proper accommodation at home, should be advised to send the sick person forthwith to the temporary hospital, and that the other members of the family should be supplied with such additional means and comforts as their state might require, to enable them to resist the influence of the infected atmosphere in which they lived.

In a circular issued on the 13th December, 1831, it was further recommended that a number of steady men should be appointed to lime-wash and purify such apartments as might be pointed out by the inspectors of the local Board.

Minute directions were added as to diet, clothing, and the general regimen to be adopted, with the view of obtaining and preserving a sound state of health.

Such were the measures at first proposed to protect the country against the introduction and spread of Asiatic cholera. The notorious failure of quarantine regulations, and the advent and fatal career of the cholera, in spite of all the precautions adopted in 1831, by the Central Board of Health, have induced the Metropolitan Commission to turn their attention to the condition of the localities in which cholera first made its appearance, and which it was generally found to select. This portion of the Report is prefaced by the proposition that—

"1. The manner of the introduction and extension of this pestilence in the various cities of Europe which it invaded was everywhere the same;" and that "the statements are strikingly uniform to the effect that it commonly made its first outbreak in the lowest and dampest part of the city it attacked, generally in the immediate neighbourhood of the river, and often on board of some ship lying near the shore." Thus Drs. Russel and Barry, the Commissioners appointed to examine on the spot the introduction and spread of the disease at St. Petersburg, state that the first case that occurred in that city "was that of a merchant who had arrived from Witagan on board a decked boat;" the second was that of a journeyman house-painter, "resident in the quarter where the barks lie, and who was taken ill about the same time as the merchant;" and the third "an invalid soldier, on duty in the same quarter, not far from the barks." They further state that "no direct personal intercourse could be traced between any two of the first five or six cases, but that it is certain that the first three were from the same district, that in which the suspected barks are stationed. This quarter is the easternmost of the whole city, the first you arrive at coming down the stream, and during the late and present perseverance of easterly winds, the very spot from whence effluvia of any kind might be most conveniently blown over the town." They add, "We are informed by Dr. Rehman that many have been taken ill on board the barks themselves." From the Report of Dr. Hamett on the cholera at Dantzic, it appears that the first two acknowledged cases of epidemic cholera occurred in the Harbour Canal, one German mile from Dantzic, in two *mud barges*, that these were followed by two others, apparently in the same locality, the next day; and that these cases occurred previously to the first arrival of vessels from Russian ports. It is stated by Dr. Becker, of Berlin, that the first cases of cholera in that city occurred among the skippers in the boats lying on the river Spree, which flows through the town, and in houses in the immediate neighbourhood of the river; and that the disease prevailed to a considerable extent in all those streets which lie along the navigated branch of the river. In Moscow, the place in which it principally prevailed, and was most mortal, was a low quarter, surrounded by a bend of the river Moskwa. At Breslau, it first attacked and principally ravaged that part of the town which is low and marshy, and which is the constant seat of intermittent fever. It is stated by Dr. Automarchi, that the condition of the houses in which cholera prevailed at Warsaw was little better than that of sewers.

The Report of the Central Commission of Paris states that the disease first appeared and subsequently spread, above all other places, in the greater number of

the *quartiers* situated upon the borders of the Seine, that it was most prevalent and most fatal in the low, close, undrained, and uncleansed localities.

In England the cholera first broke out in the port of Sunderland, and on board of vessels which were supposed to have brought the disease from some infected place on the Continent; but on a close examination of the facts, not only could no evidence be adduced to justify this suspicion, but, on the contrary, it is declared in the most positive manner that the suspected vessels had neither come from diseased ports, nor had any cases of cholera on board.

In its subsequent progress through the country, it generally first appeared in the neighbourhood of rivers or marshes, and principally raged in low and damp localities, particularly where these were also the outlets of filth. In Carlisle, for example, it is stated that it first broke out "near a mill, and raged down the damside, few cases occurring in any other part of the town."

Mr. Robertson, in his Report on the sanitary condition of Manchester, after stating that cholera "appears to have generally, in Europe, followed the track of rivers and water-courses, and in cities and towns kept in a remarkable manner to the neighbourhood of sewer-mouths," adds, "as far as my knowledge of cholera extends, in our Lancashire towns it manifested itself more than elsewhere, along the water-courses (including docks, wharfs, districts occasionally flooded, &c.), and with peculiar virulence near the outlets of drains. The progress of the disease in Manchester, from first to last, furnishes a comment on this remark. For example, in the New Bailey Prison, which stands within a few yards of the Irwell, there were no fewer than 60 cases; in Allen's court, situated between Long Mill gate and the Irk, and near the mouth of a large sewer, out of 17 seizures, in four houses, 14 died; in Back Irk street, in which a number of cases occurred, the only houses visited by the disease were close by the main sewer, which there burst into day, and ran above ground: the same remark applies in reference to cases in Little Ireland, on the river Medlock. Where the cholera broke out (as often happened) in places apart from the canals and streams, it was noticed that this, in most instances, was in yards, courts, and narrow streets, polluted by offensive cesspools, pigsties, and other sources of malaria, (some of which were too disgusting to be described,) or by open or obstructed sewers. In Warrington, where the disease raged destructively, it located itself principally in Bank street and other neighbouring low streets running into or near the Mersey—the whole quarter so notorious for its filthy sewers, as to receive the name of 'Sewer Island.' In Bolton, the number of cases did not exceed 50; but nearly all of them occurred in closes and entries adjoining a stream, into which a number of offensive sewers discharged themselves. Perhaps, however, the most striking illustration on record of the influence of ill-contrived sewerage on the origination of cholera, supposing the epidemic once prevailing, occurred in Liverpool. One morning it was discovered that several men had been seized with cholera, during the preceding night, on board a vessel lying in one of the docks. The men were sent to hospital; and the vessel having been immediately warped into the river, another ship with a healthy crew took up her station. The next morning all the hands on board were ill of cholera. On examining the dock, it was found that a large sewer discharged its contents under the spot where the vessel was placed. I give this most instructive fact on the authority of Dr. Gaultier, an accomplished physician (since deceased), the author of a valuable work on the 'Origin and Progress of Malignant Cholera in Manchester,' published in 1833."

In a Report on the sanitary condition of the labouring classes of Tain and Easter-Ross, by Mr. James Cameron, it is stated that in 1832 cholera appeared in Easter-Ross, during the fishing season; that it was, with few exceptions, confined to the fishing villages; that in the remote village of Inver, situated on the low sandy shore of the Tain Frith, and notorious for its malaria, its ravages were fearfully rapid, having cut off nearly one-half of the inhabitants; while the town of Tain and most of the rural districts escaped.

To the same effect is the observation of Mr. George Sheward, in the west of England, who states that he was parish surgeon at the time that cholera made its appearance in Upton-upon-Severn; that this town is situated upon the bank of a large navigable river, and is liable to a constantly changing population, many of the lower orders depending on the river for support; that nearly three per cent.



of the gross population fell victims to the disease within the short space of three weeks, but that its ravages were entirely confined to the lower classes; that every case fell under his notice: that the most diligent inquiries led him to believe that the disease takes generally the course of navigable rivers, and that it was so in the present instance, though its march was erratic: one case breaking out near the river, another more in the town; but in almost every one in the houses of persons who worked by the water.

Mr. Bowie, who appears to have had the first case of cholera that occurred in the metropolis, gives evidence to the same effect. He "was practising near the river, in East Smithfield, when the cholera arrived in the metropolis in 1832. Thinks he had the first case of it. It was that of a seaman, named Daniel Barber, mate of the 'Felicity,' of Limerick, which had come to London direct from that port, and had lain in the river three weeks prior to his being attacked. There was no cholera in the place from whence this ship had sailed; there was nothing particular in the condition of the ship itself; she had lain in the river three weeks before cholera broke out." "I am not quite certain," continues this witness, "but I think the second case was a seaman named Thomas Skowes, of the 'Evander' of Aberdeen; and the third was the mate of a Scotch vessel, lying likewise at the Hermitage." He further states that the cholera, having spread from Wapping along that side of the shore, including Limehouse, crossed to the opposite side of the river, namely, Rotherhithe and Bermondsey; that it then attacked the lower parts of the borough of Lambeth; next, the lower parts of Westminster; then it extended along the Fleet ditch, and thence passed into the City.

Other witnesses confirm the correctness of these statements. Thus Mr. Wagstaffe, who is practising in Bermondsey, Southwark, and Lambeth, and who saw very much of cholera, observed its course to be along the side of the river, and principally in low and damp situations.

This is entirely in accordance with the history of the origin and progress of the cholera in the country which may be considered as its birth-place; for all accounts from India agree in stating that it first breaks out and principally prevails in low and marshy situations, and particularly near the banks of rivers: that whenever a village or military station lies upon or near low, marshy, or damp ground, the occupants suffer in direct proportion to their proximity to such a situation; and that when a regiment has been encamped, one part on high and dry land and the other part on a morass, or on the bank of a river, it is constantly observed that the former has remained healthy, while the latter has suffered severely from this disease.

The history of cholera in this respect seems to bear a close analogy to that of fever. Thus Sir John Pringle, in his account of the diseases of the army during the campaign in Flanders, states, that when the army were encamped along a canal, or on damp and marshy ground, the effect was seen in the sudden seizure of the men with fever.

2. The second proposition of the Report is to the effect, that "there is no evidence that cholera spreads by the communication of the infected with the healthy." This proposition is supported by the following evidence:

When cholera broke out in Cairo in 1831, two *cordons sanitaires* were established between Cairo and Alexandria, but they did not prevent the disease from extending to Alexandria. On the 21st of August, two or three of the soldiers were seized with the disease; on the morning of the following day the cases had increased to 22, and by the afternoon of that same day they amounted to 45. Among these, one which proved rapidly fatal, occurred in the palace of the Pacha. Within the space of five days after the disease broke out in Cairo, it had spread over the whole of Lower Egypt, making everywhere nearly equal ravages, and nearly, at the same time, infecting Mansoorah, Fua, Alexandria, Rosetta, Burlos, Damietta, and all the towns and villages of the Delta. Again, it is stated by the late Sir John Lefevre, physician to the English embassy at St. Petersburg, that within a few days of the cholera breaking out in that city, it had spread so widely and so generally as to preclude all idea of its propagation by infection, and this is confirmed by the reports of the English Commissioners, Drs. Russell and Barry. A similar account is given of the manner of its spread in Dantzic. At Vienna the disease first broke out on the 13th of September; on the 14th it had extended to six

quarters of the city, and on the following day it had spread through all the rest. In Paris it was rumoured that a case had occurred in the Rue des Lombards as early as the middle of February, but this was doubted. Four cases, however, were observed in the interval between the 13th of February and the 26th of March, all of which occurred in the neighbourhood of the Seine, in the quarter de la Cité and in the quarter de l'Hôtel de Ville. On the 27th, six persons were attacked simultaneously; on the 28th 22 more were seized; on the 31st, the number had increased to 300, and out of the 48 quarters of Paris, the disease had invaded 35. In 18 days after the first invasion of this plague, namely, on the 14th of April, there were from 12,000 to 13,000 sick, and 7000 persons had already perished. At this terrible period of the epidemic, 1000 persons sometimes perished in a single day, and to be struck with the pestilence was, in general, to be dead in a few hours.

The Report goes on to argue, that "while the manner of the invasion and extension of this disease thus precludes all thought of its propagation by the communication of the infected with the healthy, there is another fact which is altogether irreconcilable with the notion of contagion, namely, that as no human means have succeeded in excluding it from particular spots, so no extent of communication with the sick has been able to carry it into other places."

In support of this proposition the Commissioners quote M. Londe, the author of a French work on Hygiene, who says, "In the north, while three lines of troops have been unable to arrest its progress, it has often passed over large tracts without infecting any intermediate place, and without following collateral lines. At other times it has been concentrated on a population which has continued to keep up free communication with the neighbourhood without at all extending itself to that neighbourhood. In France, for instance, where communication with the infected has been everywhere entirely free, there are departments, parishes, towns, and even villages, which have never had a single case of cholera, though these different localities have been sometimes inundated with persons who had fled from places devastated by the disease. Thus, according to M. Monfalcon, during the prevalence of cholera at Marseilles in 1835, Lyons alone received upwards of 10,000 immigrants from that town, and Lyons has never been attacked by cholera. Sometimes, also, portions of certain towns, though they maintained an unrestrained communication with surrounding districts decimated by cholera, were never affected in the slightest degree. At St. Petersburg, one of the islands in the Neva enjoyed this complete exemption from the invasion of the disease, and this was also the case with the faubourg Leopoldstadt at Vienna. Hence the non-transmissibility of cholera, in any manner whatsoever appears to us to be a demonstrated fact."

In like manner, Mr. Greenhow, after refuting the notion that it was imported into Sunderland by shipping, and stating that the strictest inquiries respecting the origin of the first cases, have failed to obtain the slightest evidence of their having arisen from any infected source, insists upon "the broad fact, which is totally irreconcilable with contagion, that numerous cases have occurred simultaneously at distant points, where no communication could by possibility have taken place;" and goes on to state, "that when several members of one family have been attacked, it has usually been either so precisely or nearly at the same point of time as to forbid the belief of one having communicated the disease to another." "That in the hospitals at Newcastle and Gateshead, no case has occurred of illness arising from attendance on the sick, either in the persons of the nurses, the resident apothecaries, or the attending or numerous succession of visiting members of the medical profession;" and that "those most exposed to contact with the dead, as medical men, in pursuing post-mortem examinations, have not, in any instance, suffered."

With reference to the first appearance of the disease in Great Britain, Dr. Ferguson, Inspector-general of Hospitals, observes,—"Amateur physicians from the Continent, and from every part of the United Kingdom, eager and keen for cholera, and more numerous than the patients themselves, beset and surrounded the sick in Sunderland with all the fearless self-exposing zeal of the missionary character, yet no one could contrive, even in the foulest dens of the sea-port, to produce the disease in his own person, or to carry it in his saturated clothing to the healthier



quarters of the town where he himself had his lodging." And he proceeds to point out the fact so strongly at variance with the idea of contagion, that though the first appearance of cholera in England presented a fair *prima facie* case of imported contagion, nevertheless, at the very period of its thus breaking out in Sunderland, "a case equally as fatal and severe showed itself in the upper part of Newcastle, ten miles off; another equally well marked, in a healthy quarter in Edinburgh; a third not long before in Rugby, in the very centre of the kingdom, and a fourth in Sunderland itself, as far back as the month of August, as well as many others in different parts of the country."

In the two remarkable cases already stated, that of the isolated village of Inver, where it swept away nearly one half of the inhabitants, not a single case occurred in the town of Tain, in the immediate neighbourhood; and in that of Upton-upon-Severn, not a single case of infection could be traced, either to contact with the living or dead body or with the clothing.

But, perhaps, the most striking and important demonstration in England of the fact that cholera does not spread by contagion, was afforded by the town of Birmingham. In its near vicinity, Bilston, seven or eight miles distant, with daily and hourly communication going on by road and canal between the two places, cholera prevailed more virulently than in any town of the kingdom. The people at Bilston were obliged to send over to Birmingham for coffins, as they could not be made fast enough in that town. The disease also prevailed in the townships around Bilston, but in Birmingham, with its 160,000 inhabitants, there was scarcely a single case of cholera originating in the town; the few cases that occurred there having been imported, especially along the canal, from Bilston; the persons having been clearly attacked by the disease in those localities, and then going to Birmingham, where the symptoms broke forth: but we are informed that upon a close inquiry not a single instance could be found where the disease had spread from the infected to the healthy.

The Commissioners sum up this part of their report by stating that "every witness examined by them appears to have arrived at the most clear and decided conviction from what was uniformly observed of its progress in the metropolis, that it did not spread from the communication of the infected with the healthy." And they add a very remarkable fact, on the authority of Mr. Bowie, to the effect that the crew of a vessel, all of whom had assisted in waiting upon a boy, escaped the disease, while the captain, who showed extreme apprehension, but had never gone near him, was attacked on shore.

3. The third proposition established in the report is to the effect that "cholera observes in its progress the laws of ordinary epidemics, being influenced by the same physical conditions, and attacking similar classes of persons."

These conditions may, according to the commissioners, be comprised in impure and humid air, and unsuitable or insufficient food and clothing, ill-constructed dwellings, and defective appliances for the regulation of warmth or protection against cold. The want of sufficient and proper food, it is argued with justice, is an agent of very inferior power to the habitual respiration of impure air; and it is justly affirmed, that "in the present state of most towns and cities, the number of persons whose constitution is enfeebled by want of food, compared with the number whose vital energy is depressed by want of pure air, is found to be an exceedingly small minority," an assertion which is borne out to a certain extent at least, by the fact that the population contrives to spend 24,000,000*l.* per annum on ardent spirits, and nearly an equal amount on tobacco and fermented liquors.

The Commissioners proceed to state that typhus fever may be taken as the type of the entire class of epidemic diseases that infest this country, that the *habitat* of typhus is that of the class; and that the conditions which favour its spread, and convert it into a pestilence, are equally favourable to all other pestilences. Those conditions being in the metropolis, as in every town and city, defective house and street drainage and cleansing, involving a scanty and insufficient supply of water. The evidence that the track of typhus is everywhere, the domain of filth being taken for granted, the report proceeds to prove that this was also everywhere the precise track of cholera.

It has been already seen that while cholera generally followed the track of rivers and water-courses, it had a marked preference for those portions of this



track which were at the same time the outlets of filth, being remarkably prevalent and fatal in the neighbourhood of sewer mouths. Mr. Robertson's evidence in reference to the large towns in Lancashire, already cited, was decidedly to this effect; so also is that of Mr. Bowie, who, speaking of the first case of cholera on board the "*Felicity*," says, "The neighbourhood where this case occurred was one of the dirtiest along the river. What were called the 'bone vessels,' vessels employed to carry old bones for manure, usually lay there, and some of them lay there at the time. The stench was exceedingly sickening, and was perceptible at a great distance. Such was the recklessness of the crews of these vessels, that I have frequently seen them using bones as fuel, and cooking their provisions with them, the most offensive smoke penetrating, meantime, into the houses along the shore. Putrid carcasses of dogs and cats, and other inferior animals, likewise the refuse from the shipping in the neighbourhood, thrown into the river, or left on the muddy beach by the tide, were allowed to remain there, deteriorating the atmosphere. The whole of the coast, extending from St. Katharine Docks to Wapping, was very bad, with the exception of a few houses at and near the entrance of the London Docks."

In this same locality occurred the next cases of cholera, one of the sufferers stating that he had got up early one morning and gone on deck; that the smell from the bone vessels lying a-head was so bad that it made him feel sick, and that he had never been well since.

"The condition of the houses of the labouring population in this district, through which cholera spread with great rapidity, was," continues this witness, "extremely bad. It was the practice to pump the water out of the cellars, which had got up into the houses by infiltration from the river, or more frequently flowing in through the house drains from the sewers when the tides forced back the water into the house. The stench from the water pumped out from the cellars was often intolerable; so much so that I was accustomed to go out of the way to avoid it. Cesspools were general, the contents of which percolated through the substratum, and the river water percolating through the substratum carried with it the matter of the cesspools."

This witness adds, that in his opinion "cholera took the place of typhus, affecting the same class of persons, and being influenced by the same class of circumstances."

Dr. Murdoch gives a similar account of the state of Rotherhithe: "In this district," he says, "open ditches received the contents of the privies, the privies hanging over the ditches; the paths in front of the houses were unpaved and filthy; some of the dwellings were wretched hovels. Typhus fever is always most prevalent in these filthy places, when in the neighbourhood at all; and were cholera to reappear, it would follow the law of typhus and typhoid fever, and first visit such neighbourhoods."

Of Southwark, Mr. Leadam says: "This was certainly one of the districts the most severely visited by cholera. The disease prevailed chiefly in the filthy dens which we have about us, in the close courts and alleys. The cholera track and the typhus track in this district were identical."

Mr. Hooper states, that in the parts of this district attended by him, the majority of those attacked were the inhabitants of the narrow streets and the close courts and alleys of the parish, living in filth, and breathing a confined and impure air. Many of their habitations had not even cesspools: the soil was seen oozing through the pavements of the courts. Where there were cesspools they were in a very bad condition, seldom or never emptied. Within the dwellings there was no boarding to the floors of many of the houses, the inmates sleeping on the earth on a few shavings. "I will mention," continues this witness, "Three Tuns court, in White street, in which there are about 15 houses, and probably 150 inhabitants. There is but one privy, and that without covering. The fluid soil is running down the court in front of all the houses. Several of the houses are entirely without windows or floors, that is, without boards on the floors. I could adduce examples of other courts not quite in so bad a condition, but still deplorable. These are the constant abodes of typhus, and these were the places where cholera prevailed. Few or no cases of typhus were observed while cholera was at its highest; this disease taking the place of typhus, attacking the same description of persons, and prevailing in the same localities."

"In the parish of Christ-church, in this same district," says Mr. Doubleday, "and in the neighbourhood of Broadwall, there are open sewers. At Brunswick Place there is another. In these neighbourhoods the cholera was unusually severe; in one row of houses, within two yards of the sewer, houses which are very miserable as regards size, ventilation, and means of cleanliness, the mortality was excessive; as many as five died in one house. When certain atmospheric conditions prevail and typhus arises, it is always found much more in these districts, and the result is more fatal. If cholera should revisit the metropolis, it would certainly be that the cases would there be more numerous and fatal."

"In Lambeth," says Mr. Wagstaffe, "in the streets, courts, and alleys in which cholera principally prevailed, the drainage was extremely bad; the privies were often in the cellars. I have myself passed through two feet of water to get to the houses, being obliged to walk along planks. . . . Cesspools are general in the district, and I have often seen the soil from these cesspools swimming about in the water. Whenever typhus is prevalent in the metropolis, it is invariably found in these localities, and common fever is very apt in these places to assume a typhoid type. This is the case at the present time with several cases now under my care. Scarlet fever, measles, and small-pox also are very apt to become malignant here under certain atmospheric conditions. These localities, in which typhus is constantly present, are the very localities in which cholera chiefly raged. I have at the present moment many cases of fever in the very places in which cholera was most prevalent. This autumn, diarrhœa and dysentery have also been prevalent there, and some cases were so similar to Asiatic cholera that I have asked some of my professional brethren to go and see them; two of these cases were fatal. They had, in fact, all the characteristic symptoms—vomiting, diarrhœa, with rice-coloured evacuations, cramps, suppression of urine, the particular sunken countenance, giving the expression of age to the patient, with a livid or even blue colour. If cholera were again to reappear, these would be the places which it would first visit, and in which it would be most prevalent and fatal."

Mr. Simpson, of Bloomsbury, being asked, with reference to St. Giles', among what description of persons, and in what localities, were the chief attacks of cholera? answers, "Precisely the same description of persons and in the same localities where typhus, influenza, and scarlatina, assume the putrid type."

The water supply of these districts would appear, from the evidence of the same gentleman, to be on a par with the drainage and cleansing. "Very bad," "pumped into many of the houses from the parts of the river where the most abominable impurities abounded." "The filthy state of the water in the rooms"—"exceedingly filthy water, which has been used over and over again, the odour from which is most offensive"—these are some of the expressions made use of by the witnesses.

With regard to the existing state of these districts, the uniform testimony of the witnesses is to the effect "that although some old open sewers have been arched over, and some additional common sewers have been made, no real improvement to any considerable extent has been effected in their respective districts; and that almost invariably the additional sewers that have been constructed, not being supplied with a quantity of water sufficient to carry off their contents, and keep them clean, they not only do not accomplish any sanitary purpose, but, on the contrary, act as extended cesspools."

The Commissioners then proceed to embody in a series of tables some valuable reports from Sir William Pym, relative to the total number of cholera cases in the metropolis, reported to the Board of Health in 1832; a return of the number of deaths from fever in 1838, and a return from the Fifth Annual Report of the Poor Law Commissioners of the number of fever cases for the same year (1838) among the pauper population of the same 20 districts of the metropolis, from which the deaths from fever for the whole of the population has been taken. These tables establish to demonstration the general coincidence of the cholera track with the track of typhus, as attested by the witnesses from particular cases within their own observation. On comparing, in the 20 metropolitan districts, the proportion of deaths to the population from fever and from cholera, it appears that in the districts where the deaths from fever were the highest, as in St. George's-in-the-East,



Bermondsey, Southwark, Lambeth, Whitechapel, Stepney, and Bethnal Green, cholera was the most prevalent and fatal. In some of these places the deaths from fever and cholera were nearly equal, as in Whitechapel. In others, as in Bermondsey, Southwark, and Lambeth, there was an excess on the side of cholera. But there were places in which the deaths from fever absolutely exceeded those from cholera, as in Holborn, where the deaths from fever were 1 in 227, whereas from cholera they were only 1 in 594. In St. Pancras they were still further in excess, the deaths in this district from fever being 1 in 269, from cholera 1 in 933, and in Shoreditch from fever 1 in 256, and from cholera 1 in 1203 of the population, so that in the first case the deaths from fever were more than double the deaths from cholera, in the second case more than treble, and in the latter case nearly fivefold.

"Comparing the total of deaths from fever with that from cholera, in the two groups of districts, it appears that in the 15 districts in which the mortality was greatest, the deaths from fever were 1 in 237, and from cholera 1 in 253, whilst in the 15 districts of lowest mortality, from fever there were 1 in 494, and from cholera 1 in 358; the general average of the whole of the districts being from fever 1 in 319, and from cholera 1 in 296; so that the whole difference between the mortality produced by cholera and that produced by fever, is the difference between 296, the average deaths from cholera, and 319, the average deaths from fever."

With regard to the proportion which *attacks* of fever bear to those of cholera, it appears, that in a population of 851,229, there were of in-door and out-door paupers 77,186; and that out of this number of paupers, 13,972 were attacked with fever; whereas from the Cholera Return, it appears that out of a population of 1,486,020, only 11,020 were the subjects of cholera, being the total number of the registered cases of cholera occurring in the metropolis during the year 1832.

While the total number of attacks of fever is thus enormously in excess of the total number of attacks of cholera, the *absolute* mortality from cholera is not very materially in excess of that from fever, the proportion, as already stated, being as 296 to 319; but the *comparative* mortality of cholera is terrific; nearly one half of those that are attacked by this dreadful disease inevitably perishing, the utmost range, between its lowest and highest mortality, being that between 1 in 3.6 and 1 in 1.1.

Typhus fever, which since 1838 has been epidemic in the metropolis, has for the last three years been constantly on the increase. The admissions into the London Fever Hospital since April have exceeded by several hundreds those of any corresponding period, and, as is clearly shown by a table, has been increasing during 1845, 1846, and 1847, for corresponding periods of time in proportions represented by the average numbers 28, 32, and 34; 24, 28, and 44; 21, 31, and 66; and for the six weeks ending the middle of November, by 26, 48, and 80.

From these startling facts the commissioners draw the very reasonable inference that "the causes of epidemic disease continue to operate in the metropolis with unabated and even with increased force at the present time;" and "that were cholera to revisit it at the present time, with the existing predisposition to epidemic disease, it would come at a period peculiarly favourable to its extension."

The Commissioners conclude that portion of their Report which relates directly to cholera, by some suggestions respecting the measures of alleviation which may be adopted in anticipation of those permanent works of drainage and cleansing, which offer the best hope of preventing the advent and spread of the disease.

Reverting to the recommendation of the Central Board of Health in 1832, that a number of steady men, proportionate to the districts in which they are to act, should be appointed to lime-wash and purify, under the direction of medical authority, such apartments as may be pointed out by inspectors of the local Boards, they give it as their opinion that, by some modification of this plan, an efficient agency might be formed for the thorough cleansing, both of particular localities and of individual houses; but of the nature and extent of the additional arrangements which may be necessary, they are unable to judge until they shall have received a sufficient number of returns to the circulars addressed to the medical officers and the Boards of Guardians of the metropolis.

With regard, however, to the measure of alleviation chiefly relied on during



its last visitation, viz., the establishment of district cholera hospitals, they state that experience is by no means favourable to their readoption, except under particular circumstances and modifications. The prostration of all the vital powers in a severe attack of cholera is often so great, that the mere assumption of the erect position for a few minutes appeared often to deprive the patient of the slightest chance of recovery. "The medical testimony is uniform in representing the fatigue of removal as highly injurious in great numbers of instances. It is often strikingly so in the advanced stage even of typhus. It not unfrequently happens that when a patient is removed to the fever hospital in an advanced stage of this disease, on opening the door of the carriage in which he has been conveyed he is found dead; and still more frequently it occurs that when he has not actually expired before he reaches the ward, and is placed in bed, he is cold, pulseless, and insensible, and never rallies, notwithstanding all that can be done to restore animation. In typhus this extreme debility does not take place for many days; often not until the end of the second or third week; but in a severe attack of cholera it occurs in two or three hours, and is sometimes present, in its highest degree, before there is time for the medical attendant to reach the bedside of the patient. This circumstance places the extensive employment of any remedy which involves exertion, or even slight motion, out of the question." This statement is fully borne out by the evidence of the medical witnesses who have had the greatest experience on this subject, which evidence is given at length at pp. 19 and 20 of the Report.

Experience having thus shown that cholera hospitals failed in accomplishing their object, the Commissioners recommend that the best provision practicable should be made for rendering effectual assistance to the individuals who may need it at their own houses. This, in their opinion, would be best effected by the selection of proper persons, who may be instructed as nurses, and engaged to devote their whole time to attendance on the sick at their own habitations, under the directions of the medical officer. Prompt assistance might thus be given to the patient without subjecting him to any risk from bodily fatigue, and without anything being done calculated to excite apprehension or alarm; at the same time that the curative measures employed by the medical attendant would be administered under circumstances peculiarly adapted to ensure their success.

The adoption of the principle here indicated, that of sending competent persons to attend the sick, under medical direction at their own abodes, would be attended with this further advantage—that all the means recommended for cleansing the interior of the house, and for maintaining the atmosphere of the sick room in the highest attainable state of purity, might be most efficiently carried out by the same agency.

Though, for the reasons just assigned, the Commissioners deprecate the removal of cholera patients to separate cholera hospitals, they recommended that, in cases of extreme destitution, the cholera patients should be sent to the fever wards of the new union-houses, after those establishments have been inspected by officers specially conversant with warming, ventilation, and other structural arrangements.

The Commissioners then state it as their opinion that there is but one safeguard against the cholera, as against other diseases of the same class, viz., such sanitary arrangements as will secure the purity of the atmosphere, particularly by the immediate and complete removal of all filth and refuse, and that not only from the principal squares and thoroughfares, but also from the streets, courts, and alleys of the lowest portion of the population.

The chief measures of prevention are cleansing and ventilation, carried out concurrently and skilfully performed; or if the external atmosphere is not pure, the ventilation of houses may be the very means of producing and aggravating disease.

The prevention, as far as may be of overcrowding is also insisted on as a sanitary measure, and the opinion of the Cholera Commission at Paris and the experience of Breslau are cited in confirmation of this view. The Commissioners, however, in reference to this great evil, say, "There appear to be no available legal means for the immediate prevention of overcrowding; all we can do is to point it out, as a source of evil to be dealt with hereafter."

As an evidence of the preventive efficiency of cleanliness, it is stated that the German colonists in Galicia, who were distinguished by habits of regularity and

cleanliness from the Slavonic population, were distinguished amidst that population by an immunity from cholera.

The measures of prevention thus pointed out, if not warranted by the presence of cholera, would, as Mr. Bowie justly observes, exercise a most beneficial influence in the prevention of typhus fever; and the same witness gives a striking confirmation of his views in the case of the model lodging-house in Glasshouse yard, where means have been adopted to secure cleanliness and effective ventilation, so that "whilst fever has been prevailing to a very great extent in Glasshouse street and its adjacent courts and alleys, and the verdict of a coroner's jury has been given that disease and death have been the consequence of breathing impure air, there is not at present an individual under medical treatment in the building, nor has there been a single case of fever there for upwards of four months. The only deaths which ever occurred among the lodgers were two children, labouring under hydrocephalus internus when they were admitted, and an aged mutilated seaman, who had long been affected with hydrothorax and disease of the heart." Such facts as these certainly warrant Mr. Bowie in believing that typhus fever "might be as completely put an end to in houses, villages, and towns, as the ague has been in many parts of the country." Mr. Liddle, another witness, the medical officer of Whitechapel Union, who has already contributed one or two very striking statements as to the efficacy of cleansing, drainage, and ventilation in banishing fever, and reducing the amount of disease, adds the following fact: "That Hairbrain court consists of 13 houses; that in this court he has attended 22 cases of typhus within the last six months; that during the prevalence of fever this place was without drainage, and without water, and very badly paved and cleansed; but that recently it has been drained into the new sewer in Blue Anchor yard, and that since this was done not a single case of fever has occurred in this court. In like manner in Cooper's court, which consists of 12 houses, he has attended 29 cases of fever within the last six months; the condition of this court was precisely similar to that of Hairbrain court, but Cooper's court having been drained, fever has taken its departure from this place also."

The Commissioners suggest that the principle of flushing may be immediately applied to the draining of courts and alleys, and the rapid and safe removal of decomposing refuse, but that this can only be effectually done by a single body, with which voluntary associations of district visitors or local boards, might co-operate with effect in carrying out measures for the removal of nuisances, and which might make early agreements with the several water companies for the necessary supplies of water; and the Commissioners state that they have had detailed measures placed before them for the safe and prompt removal, by the free use of water, of the soil of cesspools and privies in the worst localities, and the collections of filth in their dirtiest courts and alleys.

The following are the general conclusions at which the Commissioners arrive:

"That amidst the town populations the cholera visits with most severity the same classes of persons and the same places, and is governed nearly by the same circumstances as typhus.

"That it has been proved by experience that those circumstances are generally removable by proper sanitary arrangements, and that typhus is to a great extent preventible; and we have every reason to believe that the spread of cholera is preventible by the like means, namely, by general and combined sanitary arrangements.

"That these arrangements, instead of being incidental and collateral to other measures, are paramount, and principal, and effective, not only against cholera, but also against other epidemics.

"That when cholera first appeared in this country the general belief was that the disease spreads principally, if not entirely, by communication of the infected with the healthy, and that therefore the main security of nations, cities, and individuals consists in the isolation of the infected from the uninfected—a doctrine which naturally led to the enforcement of rigorous quarantine regulations; the establishment of military and police cordons; the excitement of panic; and the neglect and often the abandonment of the sick even by relations and friends.

"That since opportunities have been obtained of a closer observation of the character of this disease, and of the mode in which it spreads through continents,

nations, cities, towns, and families, facts have been ascertained which are incompatible with the foregoing view of its mode of dissemination and of its prevention.

"That the disease is not, as it was then generally supposed to be, contagious, and that the practical application of that doctrine did no good, but was fraught with much evil.

"That when it previously visited this country it was believed that the most powerful predisposition to this disease is induced by improper or deficient food, and that, for this reason, its chief victims are found among the poor; but it is now universally admitted that a far more powerful predisponent is the habitual respiration of an impure atmosphere; that the highest degree of susceptibility is produced where both these conditions are combined, that is, where people live irregularly, or on unsuitable diet, and at the same time filthily; and that, in places in which a great degree of cleanliness is maintained, the poor as well as the rich enjoy exemption from this disease.

"That on an examination of the actual state of the back streets, lanes, courts, and alleys of the metropolis, it is found that in general little or no improvement has taken place in their sanitary condition since the prevalence of cholera in 1832; and that were this disease again to break out in the present state of these localities, there is no reasonable ground to suppose that the pestilence would not spread as extensively and prove as fatal as on its former visitation.

"In regard to this disease, we fear that complete measures of prevention must be eventual on the combination of works, which must be the subject of further investigations; but in respect to the immediate and special measures available for the prevention of the cholera, we find that such would be measures of cleansing of whole lines of sewers, from their commencement, through the several districts to the outfalls; the cleansing of cesspools (wheresoever it may be effected into the sewers), and the removal of whatsoever may be removed in suspension in water in the various modes of flushing, by the use of additional and abundant supplies of water, and we find—

"That it is expedient that a Commission for the entire drainage of the whole of the metropolis should be appointed, with a special view to such measures, and with aid to carry them out.

[Such a Commission, embracing all the districts, with the exception of the city of London, has been lately appointed, and is now actively engaged in carrying out the recommendation of the Report.]

"With respect to measures of alleviation of cholera we find—

"That it is one of the peculiar characteristics of this disease, that it sets at defiance, to a great degree, the resources of medical art and science, as is too fully proved by the fact that, under the most favourable circumstances, of those whom it attacks there perish one out of three, or nearly one out of four, and under the most unfavourable circumstances nine out of ten.

"That still there can be no doubt that individuals are saved, who would otherwise perish, that are early placed under favourable circumstances and judicious medical treatment.

"That although the removal to cholera hospitals, unless at a very early period of the attack, and unless the situation of the hospital happened to be highly favourable, was proved by experience to be injurious rather than beneficial, yet among the classes most subject to this disease, there must be individuals in a state of such utter destitution as to render some provision absolutely necessary.

"That it is desirable that existing establishments for the reception and treatment of the sick be immediately inspected by officers especially conversant with warming, ventilation, and other structural arrangements, to advise on the alterations and adaptations necessary to afford effectual aid to the individuals who may require it.

"That where there is at present adequate accommodation by proper hospitals for fever cases, such accommodation will in general suffice for cholera, fever not being prevalent when cholera is epidemic, and fever cases being in general more numerous than those of cholera."

The remainder of this valuable Report consists of an examination of the practical working of the sewercommissions of the metropolis. The general conclusions are all that our limited space will enable us to notice. They are as follows:



"That unnecessary expense and inconvenience to the public is consequent on the division of the natural drainage areas among several district authorities, and that it is impossible that improved works of systematic drainage can be carried out under arrangements that geographically divide the lines of watershed and the outfalls between separate and conflicting authorities.

"That the works which the present district commissioners execute, and propose to execute, are uncertain, erroneous, and defective in their general principles of construction, injurious in their actions, and unduly expensive.

"That, after the authentic expositions which have been given of the principles of construction and management of improved works, the extensions of sewers or drains, accumulative of decomposing refuse, are acts of injury to the public health and of waste of the public money.

"That the execution by the district courts of commissioners of large works of drainage or sewerage, without reference to any general plan or survey, involves great risk of erroneous and imperfect works and waste of the rates they are empowered to levy.

"For the prevention of disease and the saving of health and life, by early carrying out efficient works of drainage, and diminishing the mass of atmospheric impurities, by which the public health is depressed, and, for the prevention of expenditure upon inefficient works, we feel it our duty to recommend an immediate exercise of the powers of the Crown, and

"That the several commissions appointed under its authority, in the metropolis, be recalled with the least possible delay.

"That the law of sewers, now administered by numerous persons in these separate districts, be confided to one body of commissioners for the whole of the metropolis.

"That to ensure executive dispatch, and obviate that weakening of responsibility which arises from its present division amongst large bodies, the commissioners should be limited in number; and competent, through their known attention to sanitary improvement, to select and sustain the labours of paid officers and the execution of works in the attainment of this their proper object."

This consolidation is suggested as a measure of immediate urgency to abate epidemics and disease and to stay waste, and as essentially preparatory to further alterations which the Commissioners propose hereafter to submit for consideration.

The Commissioners wisely anticipate that the first work of the consolidated commission will be a general survey by the officers of the Royal Engineers, under the direction of the Board of Ordnance, as a measure of paramount and most pressing importance.

The expediency of making this survey of the metropolis, in the first instance is very properly urged, on the ground that the metropolis serves as an example and guide to the provinces. "The errors of the works of this class in the metropolis are literally copied and exaggerated in the provincial towns, where it is rare and accidental to meet with any improvements upon them. In the provincial towns, which had abundant sources of water-supply within reach, the pernicious system of intermittent supplies have been copied from the metropolis, to the injury of trading companies, the deterioration of the supplies, and double expense of works to the consumers."

The Commissioners, aware of the ignorant objection often advanced to the creation of new bodies on the score of expense, cite the remarkable example of consolidation afforded by the Metropolitan Road Commission for the management of the roads formerly administered by a number of local trusts comprehending the suburban parishes in the metropolis. Under that commission the roads have been improved, the tolls and the debts reduced, and the business of 100 miles of road transacted satisfactorily with less attendance and consumption of time on the part of the honorary members of the board than was previously required, by the defective dispatch of business, by any one of the numerous separate boards under which important improvements were found to be impracticable.

The Commissioners have yet to report on the commission of sewers for the City of London, on the water-supply, and surface cleansing and paving of the metro-

polis, on the assessment and collection of rates, and on other important matters. These labours of the commission will have to be noticed in a future report. In the meantime the progress of the cholera on the Continent, and its now confidently reported presence in London, lends to this first Report of the Metropolitan Sanitary Commission an importance which will fully justify the details into which we have entered, at the same time that it must serve as an explanation and excuse for the omission of much important and interesting matter which would otherwise have found a place in this Report.

## APPENDIX.

### ON THE ANÆSTHETIC EFFECTS OF THE INHALATION OF CHLOROFORM.

THE discovery of this anæsthetic agent by Professor Simpson, and its public announcement having been made, when the arrangements of the present volume were nearly completed, we are compelled to devote but a few pages to its consideration; the importance, however, of the discovery, as a parallel to ether inhalation, is such, that we do not feel justified in postponing an account of it.

It appears from a pamphlet with which we have been favoured by the discoverer, Professor Simpson, of Edinburgh,\* that he had for some time been impressed with the conviction that some congeneric agent might be employed, which should be destitute of some of the disagreeable properties possessed by sulphuric ether, and he accordingly devoted himself to the investigation. The first suggestion of the particular substance *chloroform*, or *perchloride of formyle*, was made by Mr. Waldie, and the fluid itself was first manufactured for Dr. Simpson by Messrs. Duncan, Hockhurst, and Co., from whom we have received a sample.

*History and Preparation.*—*Chloroform* was first discovered about the same time by Soubeiran and Liebig, in 1831, and its chemical composition was ascertained by Dumas, in 1835, to be two atoms of carbon, one atom of hydrogen, and three atoms of chlorine ( $C_2 H. Cl_3$ ). It may be prepared in various ways—1. By distilling spirit of wine, or pyroxalic spirit, water, and chloride of lime, in certain proportions. 2. By making milk of lime, or an aqueous solution of caustic alkali, act upon chloral. 3. By passing a stream of chlorine gas into a solution of caustic potass in spirits of wine. Of these, the first is the most simple, and may be adopted by any practitioner with an ordinary knowledge of chemical manipulation. The formula for its preparation, as forwarded to us by Messrs. Duncan and Co., and which we have found both simple and effectual, is as follows:

Take chloride of lime in powder	lb. iv,
Water . . . . .	lb. xij,
Rectified spirit . . . . .	f. $\frac{3}{4}$ xij.

Mix in a large retort, and distil with a gentle heat, as long as a dense fluid which sinks in the water with which it comes over is produced. Decant the water, and rectify the dense fluid by agitating it with successive portions of strong oil of vitriol, and redistil from carbonate of baryta. This latter part of the process we do not regard to be essential, as we have employed the product of the first distillation with perfect success.

*Properties.*—*Chloroform* is a dense oily liquid, sp. gr. 1.48, does not inflame, by which it is distinguished from other fluids with which it may be confounded, and probably will, from its expensiveness, be adulterated (such as chloric ether), and boils at  $141^{\circ}$ . Its odour is somewhat ethereal, and when inhaled, it gives a pleasant sensation of sweetness in the mouth.

*Advantages.*—It has been brought forward by Dr. Simpson, and we believe justly, as a substitute for ether, for the following reasons: 1st. A less quantity is required to produce insensibility. 2d. Its action is more rapid, more perfect, and persistent. 3d. Recovery is usually more speedy, leaves fewer unpleasant feel-

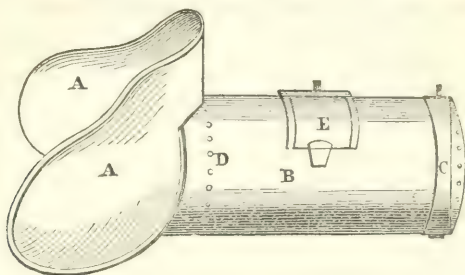
\* Account of a New Anæsthetic Agent as a Substitute for Sulphuric Ether in Surgery, &c. By S. G. Simpson, M. D.



ings. 4th. It has the great advantage of not exciting irritation of the bronchial tubes, of being pleasant to the taste, and of not leaving a disagreeable taint upon the breath.

*Exhibition.*—One drachm sprinkled upon a piece of lint placed in the hollow of a funnel-shaped sponge, we have found generally sufficient. In one or two cases insensibility has been produced by three drops, in others we have seen as much as four drachms consumed. We should say, from the present experience of its effects, that one drachm will be found an average quantum.

Having observed, however, that the bystanders are often affected as well as the patient by the escape of the vapour from the sponge or handkerchief, and from motives of economy as regards the preparation, we have devised the following instrument, which may be made for three or four shillings in block-tin, and which has been perfectly successful. The diagram is about three times smaller than the original.



A, Mouth-piece, lined with wash-leather.

B, Body of the inhaler containing cotton wool.

C, Perforated lid for admitting air and putting in the wool.

D, Line denoting the situation of a second perforated plate, to prevent contact of the chloroform with the lips.

E, Small trap-door and lid for pouring the chloroform upon the wool.

*Effects.*—As of ether, the effects of chloroform are regulated by the peculiarity of the individual, but as a general rule there is no excitement, the patient going calmly as into a deep sleep, in the space of from  $1\frac{1}{2}$  to four minutes. We have, however, in one or two cases, seen some struggling before the supervention of complete insensibility. We have not as yet noticed any peculiarity in the eye which indicates the period of insensibility, but that period can generally be ascertained by the head falling as in sleep, and the patient remaining silent when spoken to. The pulse is but little affected, as far as we have at present been able to ascertain. When properly administered, and in a sufficient dose, the breathing is tranquil; we have, however, in one case, seen more complete stertor than under the influence of ether. In the same case there were also strong spasmodic movements of the limbs. These unpleasant symptoms soon subsided.

*Cautions.*—The liquid should be ascertained to be correct in composition (sp. gr. 1.48, and not inflammable). The sponge, or inhaler, should not be held at first too close to the face, as the vapour feels then unpleasantly *hot* to the bronchial membrane. It may be gradually placed close, but the fluid should not be allowed to touch the lips, as it will then produce vesication. In other respects, we believe that similar precautions are required as in the inhalation of ether. It will indubitably destroy life if too long persisted in. Short of this, we believe it to be capable of inducing unpleasant effects as stertorous breathing in the case alluded to. We have known it also induce vomiting, and in the case of a lady, whose tooth we saw extracted under its influence, we had olfactory evidence of relaxation of the sphincters.

*Uses in Surgery.*—It is not our intention to relate the individual cases in which chloroform has been employed, we shall be content to state that it has been used in Edinburgh and London in operations for stone, amputations, tying *nævi*, &c.

*Uses in Midwifery.*—It has been used in midwifery by its discoverer, and by Dr. Protheroe Smith. Dr. Simpson states that in labour it does not require to be given in such large doses as in surgery.

*Uses in Medicine.*—Chloroform has been used successfully by Dr. P. Smith, in whooping-cough, dysmenorrhœa, colic and biliary calculus. In neuralgia, he has seen it stop the fit at once. In delirium tremens it has procured ocular sleep, after the failure of opium. He has seen a sick headache dispelled by a few inhalations. We have heard of the spasms of tetanus being relieved by it.

We apologize to the readers of the "Abstract" for the above imperfect account of this agent, rendered unavoidable under the circumstances of the publication of the present Volume, but we believe we have touched upon, though cursorily, everything of importance at present known upon the subject. We shall not fail in a future Volume to record the more matured experience of the profession. At present we may state, from personal acquaintance with the effects of chloroform, that it will entirely supersede ether inhalation, and its pompous mechanical adjuncts.

## BIBLIOGRAPHICAL RECORD, FOR 1846-7.

WHEN NOT OTHERWISE STATED, ALL BOOKS PUBLISHED IN LONDON.

### BRITISH.

1. A Practical Treatise on the Diseases Peculiar to Women; illustrated by Cases derived from Hospital and Private Practice. By Samuel Ashwell, M. D., late Obstetric Physician and Lecturer to Guy's Hospital. Second edition.

2. Clinical Facts and Reflections. Also, Remarks on the Impunity of Murder in some Cases of Presumed Insanity. By Thomas Mayo, M. D., F. R. S., Fellow of the Royal College of Physicians, and late Fellow of Oriel College, Oxford. 8vo.

3. Diseases of the Skin. By Erasmus Wilson, F. R. S. 8vo., 12s.

4. Turner's Chemistry. Eighth edition. By Baron Liebig, Professor of Chemistry in the University of Giessen, and William Gregory, M. D., Professor of Chemistry in the University of Edinburgh. One vol. 8vo., 15s.

5. A Tabular View and Synopsis of the Physical Signs and Diagnosis of the Diseases of the Lungs. By James Turnbull, M. D., Physician to the Liverpool Northern Hospital. 8vo., 5s.

6. Ophthalmic Medicine and Surgery. By Wharton Jones, F. R. S. 12mo., 12s. 6d.

7. The London and Provincial Medical Directory; containing the Name, Address, Qualification, Honorary Distinctions, and Literary Productions of every known Qualified Practitioner in England and Wales—a Medical Almanac—Medical Etiquette—Obituary—Bibliography—Hospitals and Dispensaries—English Universities, Colleges, &c., Medical Societies, and a great variety of interesting and valuable information. 8vo., 6s. 6d.

8. Practical Observations on some of the Diseases of the Stomach and Alimentary Canal. By James Alderson, M. D., F. R. S., Fellow of the Royal College of Physicians, late Senior Physician to the Hull General Infirmary, and formerly Fellow of Pembroke College, Cambridge. 8vo., 10s. 6d.

9. A Practical Treatise on Tumours of the Uterus and its Appendages. (Being the Jacksonian Prize Dissertation.) By Thomas Safford Lee, M. R. C. S. E., Fellow of the Royal Medico-Chirurgical Society, &c. &c. 8vo., 8s.

10. Thoughts on the Nature and Treatment of several Severe Diseases of the Human Body. By Edward J. Seymour, M. D., F. R. S., late Physician to St. George's Hos-

pital, &c. &c. Two vols. Vol. 1: Comprising—1. Diseases of the Stomach. 2. Gout. 3. Mental Derangement. 4. Sciatica. 8vo., 10s. 6d.

11. A Treatise on Fractures in the Vicinity of Joints, and on Certain Forms of Accidental and Congenital Dislocations. By Robert William Smith, M. D., M. R. I. A., Fellow of the Royal College of Surgeons in Ireland. 8vo., 16s.

12. The Preservation of Infants in Delivery, being an Exposition of the Chief Cause of Mortality in Still-born Children. By Richard King, M. D., M. R. C. S., L. S. A. 12mo., 4s.

13. Remarks on the Diet of Children; and on the Distinctions between the Digestive Powers of the Infant and the Adult. By George T. Gream, one of the principal Medical Officers of the Queen Charlotte's Lying-in-Hospital, late Lecturer on Midwifery and the Diseases of Women and Children, &c., &c. 12mo., 5s.

14. The Correlation of Physical Forces. By W. R. Grove, Esq., M. A., F. R. S. 2s. 6d.

15. On Indigestion and certain Bilious Disorders often conjoined with it. To which are added, Short Notes on Diet. By G. C. Child, Physician to the Westminster General Dispensary. 12mo., 5s. 6d.

16. On Cataract, Artificial Pupil, and Strabismus. By F. H. Brett, M. D., F. R. C. S., late Surgeon to the Government Ophthalmic Hospital, Calcutta. 12mo., 2s. 6d.

17. The Anatomy and Philosophy of Expression, as connected with the Fine Arts. By Sir Charles Bell. Imper., 12. 1s.

18. Body and Soul; or, Life, Mind, and Matter considered as to their Peculiar Nature, and Combined Condition in Living Things; with a view to render the Physiology of Life and Mind more easily understood by the General Reader. By George Redford, M. R. C. S. L., &c. 8vo., 7s.

19. Observations on Aneurism and its Treatment by Compression. By O'Brien Bellingham, M. D., F. R. C. S. I., one of the Medical Officers of St. Vincent's Hospital, Dublin. 12mo., 4s.

20. Observations on the Treatment of Lateral Curvature of the Spine, pointing out the advantages to be gained by placing the Body in a position to produce Lateral Flexion of the Vertebral Column, combined with the after application of firm mechanical support. By Edward F. Lonsdale, Assistant



Surgeon to the Royal Orthopædic Hospital. 8vo., 6s.

21. A Practical Treatise on the Inhalation of Sulphuric Ether. Illustrated with Cases, and Remarks as to the Proper Period to commence Operations; with the Latest Method of Application. By W. Philpot Brookes, M. D., M. R. C. S. England, Surgeon to the Cheltenham General Hospital and Dispensary, &c. &c. 8vo., 1s.

22. The Structure, Diseases, and Injuries of the Blood-vessels; being the Jacksonian Prize Essay for 1844. By Edwards Crisp, M. R. C. S., &c. 8vo. 14s.

23. The Pathology and Treatment of certain Diseases of the Skin, generally Pronounced Intractable. Illustrated by upwards of Forty Cases. By Thomas Hunt, M. R. C. S. 8vo., 6s.

24. The Construction and Government of Lunatic Asylums and Hospitals for the Insane. By John Conolly, M. D., Fellow of the Royal College of Physicians of London, and Physician to the Middlesex Lunatic Asylum at Hanwell. Post 8vo.

25. Treatise on Diet and Regimen. Fourth Edition, much enlarged and rewritten, embracing the more Recent Views, Facts, and Discoveries of Chemistry and Statistics. By William Henry Robertson, M. D., Physician to the Buxton Bath Charity. Part II., 2s.

26. On Dyspepsia; with Remarks submitted in Support of the Opinion, that the proximate cause of this, and of all other Diseases affecting the General System, is Vitiation of the Blood. By John Burdett Steward, M. D., Fellow of the Royal College of Physicians, London. 8vo., 4s.

27. A Synopsis of the Diseases of the Human Ear. By William Harvey, M. R. C. S., Surgeon to the Royal Dispensary for Diseases of the Ear. 2s. 6d.

28. Physiological Anatomy and Physiology of Man. With numerous Original Illustrations. By R. B. Todd, M. D., F. R. S., and W. Bowman, F. R. S., of King's College, London. To be completed in Four Parts, forming Two Volumes. Part III., 7s.

29. The Causes and Treatment of Abortion and Sterility; being the result of an extended Practical Inquiry into the Physiological and Morbid Conditions of the Uterus, with reference especially to Leucorrhæal Affections, and the Diseases of Menstruation. By James Whitehead, F. R. C. S., Surgeon to the Manchester and Salford Lying-in Hospital. 8vo., 12s.

30. Observations on some of the Parts of Surgical Practice; preceded by an Inquiry into the Claims that Surgery may be supposed to have for being classed as a Science. By John Painter Vincent, late Senior Surgeon to St. Bartholomew's Hospital. 8vo., 12s.

31. Medico-Chirurgical Transactions, published by the Royal Medical and Chirurgical Society of London. Vol. XXX. Second Series, Vol. XII. 8vo., 12s.

32. The Human Brain; its Structure, Physiology, and Diseases. With a Description

of the Typical Forms of Brain in the Animal Kingdom. By Samuel Solly, F. R. S., Senior Assistant-Surgeon to St. Thomas's Hospital, and Lecturer on Clinical Surgery, &c. Second edition, greatly enlarged. 8vo., 17. 1s.

33. On Certain Diseases of the Chest; and on the Principles of Auscultation. By Peyton Blackiston, M. D., F. R. S., Physician to the Birmingham Hospital. 8vo., 12s.

34. On the Causes, Symptoms, and Treatment of Spermatorrhœa. Translated from the French of M. Lallemand. By Henry J. McDougall, M. R. C. S., late House Surgeon to University College Hospital. 8vo., 12s.

35. A Guide to the Examination of the Urine in Health and Disease. For the use of Students. By Alfred Markwick, Surgeon to the Western German Dispensary, &c. 18mo., 4s.

36. Researches into the Pathology and Treatment of the Asiatic Cholera. By E. A. Parkes, M. D., Assistant Physician to University College Hospital. 8vo., 6s.

37. Koecker's Essay on Diseases of the Jaws, and their treatment. New Edition, with copious Notes, and Tables of upwards of 300 Cases. By J. B. Mitchell, M. D., Surgeon-Dentist. 8vo., 5s.

#### FRENCH.

1. Société des Sciences Médicales de l'Arrondissement de Gannat. Premier compte rendu, par M. le Docteur Secretain. 8vo.

2. Rapports Généraux des Travaux du Conseil de Salubrité, pendant les années 1840 à 1845 inclusivement. Publiés par ordre de M. le Pair de France, Préfet de Police. 4to. Paris.

3. Des Hydropisies sous le Rapport Pathogénique. Thèse du concours pour l'agrégation en médecine, par M. A. Becquerel, D. M. 4to. Paris.

4. Etudes sur les Maladies des Femmes qu'on observe le plus fréquemment dans la Pratique. Par le Docteur Alexis Favrot, ancien élève des hôpitaux. 8vo. Paris.

5. Des Eruptions Cutanées dans les Fièvres. Thèse présentée et soutenue devant la Faculté de médecine de Paris, à l'occasion du concours pour l'agrégation en médecine, par M. Henri roger, médecin des hôpitaux. 4to. Paris.

6. Recherches Physiologiques et Pratiques sur l'Éthérisation. Par M. Pirogoff. 8vo. Saint Petersburg, 1847.

7. Mémoire sur la Voix Humaine. Par Manuel Garcia, professeur de chant au conservatoire du musique. 8vo. Paris, 1847.

9. Essais sur la Question de Savoir s'il existe constamment du Cuivre et du Plomb Physiologiques dans les Organes de l'Homme. Par A. Chevalier, membre de l'Académie. 8vo. Paris, 1847.

10. De la Colique Saturnine Traitée et Guérie par les Opiacés. Nouvelles observations médico-pratiques du Docteur Triberti, médecin en chef du grand hôpital de Milan;

traduit de l'Italien par M. le Docteur Fred. Cazalis, D. M. M. 8vo. Montpellier.

11. De la Blennorrhée, vulgairement connue sous le nom de Goutte Militaire, et de son Traitement. Par le Docteur Magaud, ex-interne de l'hospice de l'Antiquaille, &c. Paris, 1847.

12. Précis Iconographique de Médecine Opératoire et d'Anatomie Chirurgicale. Par MM. Cl. Bernard et Ch. Huet; dessins d'après nature, par M. J. B. Leveillé. 12mo.

13. De la Science des Indications et de l'Etude des Agents Médicamenteux, au point de vue de la Médecine pratique. Par le Docteur Audiganne. 8vo. Paris, 1847.

14. Essai sur l'Inflammation. Par M. Crepin. 8vo. Strasbourg.

15. Du Rachitisme. Thèse inaugurale, par M. Charles Sauvé, ancien élève des hôpitaux civils de Paris. 4to. Paris, 1847.

16. Mémoire sur la Peste et les Quarantaines. Par le Docteur Brachet, professeur à l'Ecole de médecine de Lyon. 8vo. Lyon, 1847.

17. Sur l'Emploi de l'Iodure de Potassium dans le Traitement des Maladies Syphilitiques. Mémoire couronné par la Société de médecine de Paris; par le Docteur P. S. Payan, chirurgien en chef de l'hôpital civil d'Aix. 8vo. Paris, 1847.

18. Recherches Statistiques sur la Nature et les Causes des Maladies Oculaires observées en Belgique, et en particulier dans la Province du Brabant. Rapport adressé à M. Leedts, gouverneur du Brabant, par M. le Docteur Florent Cunier, chirurgien de l'Institut ophthalmique de Bruxelles, médecin oculiste des princes. 1 vol. 8vo.

19. Etudes Cliniques sur les Maladies des Femmes appliquées aux Affections Nerveuses et Uterines, et précédées d'Essais philosophiques et anthropologiques sur la Physiologie et la Pathologie; par E. Mathieu, D. M. P. 8vo. Paris.

20. Considérations sur la Grossesse. Thèse inaugurale, par André-Alphonse Pourcher. 4to. Paris.

21. Nouveaux Modes et Procédés pour l'Amputation des Membres; mémoires présentés à l'Académie royale de médecine de Belgique, par M. le Docteur F. J. de Soupart, membre correspondant de la compagnie, &c. 4to. Bruxelles.

22. Expériences relatives aux Effets des Inhalations d'Ether Sulfurique. Par M. A. Thiernes, professeur à l'Ecole de médecine vétérinaire et d'agriculture de l'Etat, membre titulaire de l'Académie de médecine de Belgique. 8vo. Bruxelles.

23. Supériorité des Emissions Sanguines dans le Traitement des Affections Uterines. Par le Docteur Clément Ollivier (d'Angers), médecin spécialiste pour les maladies des femmes, &c. 8vo. Paris, 1847.

24. Documents pour servir à l'Histoire de la Bibliographie Médicale Belge avant le dix-neuvième Siècle. Par M. C. Broeckx. 8vo. Anvers.

25. Compte Rendu Analytique des Observations recueillies pendant son Exercice Mé-

dical à l'Hôtel-Dieu, lu en séance publique du Conseil d'administration, par M. Levrat aîné, ex-doyen des médecins dudit hôpital.

26. Mémoire sur la Structure et les Fonctions de la Raie. Par M. le Docteur Ch. Poelman, professeur agrégé à l'Université de Gand, &c. 8vo.

27. Remarques sur Quelques Etablissements d'Aliénés de la Belgique, de la Hollande et de l'Angleterre. Par M. Brierre de Boismont, directeur d'un établissement d'aliénés, &c. 8vo. Paris.

28. Hygiène et Maladies des Cheveux. Par H. Costilhes, docteur en médecin de la Faculté de Paris. 8vo. Paris.

29. De l'Ethérisation. Par J. M. Dupuy, interne des hôpitaux de Paris. 4to. Paris.

30. Mémoire sur la Condition des Classes Ouvrières et sur le Travail des Enfants. Par le Conseil central de salubrité publique de Bruxelles; rapporteur, M. le Docteur Dieudonné, membre du conseil de salubrité de Bruxelles. 8vo. Bruxelles.

31. Recherches Expérimentales sur la Température Animale. Thèse inaugurale, par le Docteur A. Demarquay, ancien interne des hôpitaux. 4to.

32. Exposé des Travaux de la Société des Sciences Médicales de la Moselle pendant l'année 1846. 8vo. Metz.

33. Mémoire Théorique et Pratique sur certaines Dermatoses, traitées au Moyen de l'Iodure de Soufre. Par le Docteur S. Escobar, médecin de l'hôpital général de Madrid, traduit et annoté par le Docteur Hubert Rodrigues, professeur agr. à la Faculté de médecine de Montpellier. 12mo. Montpellier.

34. Observation d'une Hydro-Encéphalocèle Congénitale, située à la Région Occipitale. Par M. Delavacherie, membre de l'Académie royale de médecine de Belgique. 8vo. Bruxelles.

35. Eléments de Morphologie Humaine. Première partie; Physionomie de relation; localization physiognomique des plis faciaux représentatifs des différents actes de relation, pour servir à l'étude des races. Par J. E. Cornay (de Rochefort), D. M. P. 18mo. Prix 2 fr. Paris.

36. Considérations Pratiques sur la Carie des Dents. Par Hattute, chirurgien-dentiste de l'état-major de la 1re division militaire, et E. Hattute, élève des hôpitaux civils et militaires. 8vo.

37. Relation d'une Opération de Taille pratiquée à l'Hôpital de Bon Secours. Par J. B. E. Defer, D. M., chirurgien des hôpitaux civils de Metz, &c. 8vo.

38. Rapport sur la Chirurgie Oculaire de M. Ch. Deval, présenté à la Société de médecine de Poitiers, par M. Gaillard, chirurgien de l'Hôtel Dieu, au nom d'une commission composée de MM. Quotard, de Morineau et Gaillard.

39. Revue Rétrospective des Cas Judiciaires qui ont nécessité l'Intervention des Médecins dans l'Arrondissement de Metz. Par MM. Isnard et S. Dieu, docteurs en médecine de la Faculté de Paris, professeurs

à l'hôpital militaire d'instruction à Metz, &c. 8vo. Paris.

# GERMAN.

1. Abbildung u. Beschreibung eines fötusähnlichen Gewächses, das in einem 50jähr. Manne nach dessen Tode gefunden wurde, nebst einer kurzen Lebensbeschreibung des Verstorbenen u. dem Sectionsbefund. Passau 1846.

2. Angerstein, H., Prospectus der Mineralwasser-Anstalt zu Hannover. Mit einem Vorwort. Das. 1846. 1-6th thlr.

3. Arit, C. F., Die Anstalten für Blinde u. Augenkranken in Prag. Histor. Skizze. Das. 1846.

4. Derselbe, Die Pflege der Augen im gesunden u. kranken Zustande, nebst einem Anhang über Augengläser, allgemein fasslich dargestellt. Prag. 1846.

5. d'Arpentigny, C. S., Die Chiromonomie, oder Anleitung, die Richtungen des Geistes aus den Formen der Hand zu erkennen. Nach dem Franz. bearb. von A. Schraishuon. Stuttgart 1846.

6. Badeorte Nassau's, s. das Herzogthum Nassau, Darmstadt 1846. Lange. 6 thlr.

7. Barkow, H. C. L., Der Winterschlaf nach seinen Erscheinungen im Thierreich dargestellt. Berlin 1845. 3 thlr.

8. Bauer, Carl Aug. Ludw., Das Institut der Wundärzte I. Cl. u. seine Gegner. Stolpen 1846.  $\frac{1}{2}$  thlr.

9. Becher, Siegf., Die Bevölkerungsverhältnisse der österr. Monarchie, mit einem Anhang der Volkszahl, Geburten, Sterbefälle, u. Trauungen vom J. 1819 bis zum J. 1843. Wien 1846. 1-2-3d thlr.

10. Bergmann, Carl, Einige Beobachtungen u. Reflexionen über die Skelettsysteme der Wirbelthiere, deren Begrenzung u. Plan. Göttingen 1846. 3-8th thlr.

11. Bibra, Freih. E. v., Hülfstabellen zur Erkennung zoochem. Substanzen. Erlangen 1846. 1-3d thlr.

12. Brandes, Friedr., Des Kartoffel-oder Kartoffel-Malz-Bier. Quedlinburg 1848. 1-3d thlr.

13. Carus, Carl Gust., Ueber Grand u. Bedeutung der verschiedenen Formen der Hand in verschiedenen Personen. Eine Vorlesung, erläutert durch Abbildungen thier. u. menschl. Hände. Stuttgart 1846. 1 thlr.

14. Casper, Joh. Ludw., Denkwürdigkeiten zur med. Statistik u. Staatsarzneikunde. Für Criminalisten u. Aerzte. Berlin 1846. 2 $\frac{1}{2}$  thlr.

15. Clarus, Joan. Christ. Aug., Adversaria clinica. Lipsia 1846. 4-5th thlr.

16. Dietl, Jos., Anatom. Klinik der Gehirnkrankheiten. Wien 1845. 2 thlr.

17. Döbereiner, J. W. u. Franz, Deutsches Apothekerbuch. Stuttgart 1846.  $\frac{1}{2}$  thlr.

18. Donnè, Al., Die Mikroskopie als Hülfs-wissenschaft der Medicin.—Mikroskopische, Anatomie u. Physiologie der thier. Flüssigkeiten. Nach dem Französ. bearbeitet u. durch zahlreiche Anmerkungen u. Zusätze

vervollständigt von E. v. Gorup-Besaez. Erlangen 1849. 2 thlr.

19. Dupuytren, Vorträge über chir. Klinik, herausgeb. von Brierre de Boismont u. Marx. u. ganz. umgearb. Ausgabe, übers. von H. E. Flies. Quedlinb. 1846. 1-2-3ds thlr.

20. Eberhard, E. F., Kilmatographie. Coburg u. seine Umgebung, Das. 1846. 2-5th thlr.

21. Elwert, Beitrag zu den Rück-u. Fortschritten in der Medicin. II. Sendschreiben an Holscher. Bremen 1846. 3-8th thlr.

22. Emmert, Carl, Beiträge zur Pathologie u. Therapie, mit besonderer Berücksichtigung der Chirurgie. Bonn 1842-1846. 1-1-3d thlr. v.

23. Engelhardt, P. J. P., Die deutschen Arzneigewächse, oder alphabetisch geordnete Beschreibungen sämmtlicher in Deutschland wildwachsenden Arzneigewächse, mit Angabe ihrer Standorts, die Zeit ihrer Einsammlung u. ihrer med. Benutzung. Nordhausen 1846.  $\frac{1}{2}$  thlr.

26. Erlach, C. S. v., Versuche über die Perspiration einiger mit Lungen athmender Wirbelthiere. Bonn 1846. 1 thlr.

25. Faber, Wilh. Eberh., Die Wuthkrankheit der Thiere u. des Menschen, mit Benutzung der Acten k. würth. Med.-Collegiums, dargestellt. I. Th. Die Wuthkrankheit der Thiere. Carlsruhe 1846.

26. Ficinus, Robert, Ueber das Ausfallen der Zähne u. das Wesen der Zahncares. 8 Fig.

27. Froriep, Ludw. Fred. v., Ueber die Isolirung der Sinne, als Basis eines neuen Systems der Isolirung der Strafgefangenen. In der k. preuss. Akad. gemeinnütziger Wissenschaften zu Erfurt am 5 März 1846 vorgetragen. Weimar 1846. 2-5th thlr.

28. Froriep, Rob., Kupfertafeln, chirurg. herausgegeben von Rob. Froriep. Weimar 1830-1846.  $\frac{1}{2}$  thlr.

29. Gluge, Gottl., Atlas der pathol. Anatomie. Jena 1845 u. 1846. Mauke. 1-5-6th thlr.

30. Gorup-Besanez, E. Freyh. v., Untersuchungen über Galle. Ein Beitrag zur physiol. u. pathol. Chemie. Erlangen 1846. (12 Ngr.)

31. Grewinck, Ludw. Joh., Anweisung, das Stammeln gründlich zu behandeln. Mitau 1846. 16 Ngr.

32. Haeuslmair, Joan. Bapt., Tentamen med. clin., seu pathologiae et therapiae hydropum practicae. Monachii 1846 1 thlr.

33. Handwörterbuch der Physiologie, mit Rücksicht auf physiol. Pathologie. In Verbindung mit mehreren Gelehrten herausgegeben von Rud. Wagner, Braunschweig 1842-1846. 1 thlr.

34. Hartwig, Bemerkungen über den richtigen Gebrauch der Seebäder, nebst einer Tabelle der täglichen Fluthzeit während der Sommermonate des J. 1846. Antwerpen 1846.

35. Heidenhain, Heinr., Die Med.-Reform im Sinne der Wissenschaft, ein aphorist.



Beitrag zur Tagesfrage. Marienwerder 1846. 1-3d thlr.

36. Heidenreich, Friedr. Wilh., Die physiolog. Induction, ein Beitrag zur med. u. Nervenphysik. Ansbach 1846. 5-8th thlr.

37. Hoffmann, Herm., Schilderung der deutschen Pflanzenfamilien vom botanisch-descriptiven u. physiologisch-chem. Standpunkte. Giessen 1846. 1-2-3d thlr.

38. Hyrtl, Jos., Lehrbuch der Anatomie des Menschen, Rücksicht auf physiol. Begründung u. prakt. Anwendung. Prag 1846. 4½ thlr.

39. Krampfhusten, der, der Kinder u. seine sichern Heilmittel. In erläuternden Beispielen, nebst einem Anhang über die Zubereitung, Form u. Gabe der betreffenden Arzneimittel, hauptsächlich für Laien, dargestellt von einem prakt. Arzt Stuttgart 1846. 2-5th thlr.

40. Lallemand, Med.-chir. Klinik, veröffentlicht von: Herrn. Kaula, übers. von N. Davis. Nürnberg 1846. 1½ thlr.

41. Lisfranc, J., Operative Medicin. In Verbindung mit dem Autor, deutsch bearbeitet von Sigism. Frankenberg. Leipzig 1846. ¾ thlr.

42. Mühlbauer, Franz Xaver, Die Lehre von der Percussion n. Auscultation, mit Berücksichtigung der pathol. Anatomie der Brustorgane für den prakt. Arzt zusammengestellt. Erlangen 1847. 14 Ngr.

43. Münster, Gust. Wilh., Anatomische Grundlagen zur Seelenlehre des Menschen u. der Thiere, für gebildete u. gelehrte Aerzte. Halle 1846. 1 thlr.

44. Notizen aus dem Gebiete der prakt. Pharmacie u. deren Hilfswissenschaften, herausgegeben von A. R. L. Voget. Crefeld 1846. 1½ thlr.

45. Oettengen, Otto Leo ab, Observationes ad Pathologiam et Therapiam spectantes. Berolini 1846. ¾ thlr.

46. Plange, Ed., Memoranda der Kinderkrankheiten. Weimar 1846. ¾ thlr.

47. Richter, F. G., Die körperliche Erziehung der Kinder in ihrem ersten Lebensalter, um sie gesund u. kräftig zu erhalten, u. der so grossen Sterblichkeit in dieser Periode vorzubeugen. Wien 1846. ¼ thlr.

48. Romershausen, Elard, Der dynamische Antagonismus. 1. Hft. Der Antagonismus der Elektrizität u. des Magnetismus. Halle 1846. ¾ thlr.

49. Rosenbaum, W., (Zerbst.) Der Abdominalanthraxtyphus der Pferde. Zerbst 1846. 1-6th thlr.

50. Schmalz, Ed., Erfahrungen über die Krankheiten des Gehörs u. ihre Heilung. Leipzig 1846. 2½ thlr.

51. Schnitzer, A., Handbuch der Pathologie u. Therapie der Geisteskrankheiten. Für prakt. Aerzte u. Studierende bearbeitet von mehrern Aerzten u. herausgegeben. von A. Schn. Leipzig 1846. 4 thlr.

52. Schrötter, A., Die Chemie nach ihrem gegenwärtigen Zustand, mit besonderer Berücksichtigung ihres techn. u. analyt. Theiles. Wien 1846. 14-5th thlr.

53. Seyfert, G., Verhütung u. Heilung der Lungenschwindsucht durch Erweiterung des Brustkastens u. Wiedergeburt der Athmungsorgane, nebst einer Anweisung, tuberculöse u. scrophulöse Krankheiten in der Entstehung auf einfachem mechan. Wege zu heilen. Berlin, 1846. ¼ thlr.

54. Siebold, Ed. Casp. Jac. v., Lehrbuch der gerichtl. Medicin. Zur Grundlage bei academ. Vorlesungen u. zum Gebrauch für gerichtl. Aerzte u. Rechtsgelehrte. Berlin 1846. 1 1-5th thlr.

55. Unger, F., Grundzüge, der Anatomie u. Physiologie der Pflanzen. Wien 1846. 1½ thlr.

56. Vogel, Jul., Ueber die Gesetze, nach welchen die Mischung von Flüssigkeiten u. ihr Eindringen in permeable Substanzen erfolgt, mit besonderer Rücksicht auf die Vorgänge im menschlichen u. thierischen Organismus. Göttingen, 1846. ¼ thlr. (Aus den Göttinger Studien.)

57. Waitz, Theod., Grundlegung der Psychologie. Nebst einer Anwendung auf das Seelenleben der Thiere, besonders der Instincterscheinungen. Homburg u. Gotha, 1846. 1 thlr.

58. Walther, A. de, De mechanismo implicationis pilorum in plica Polonica, disquisitiones microscopicae. Kioviae, 1845.

59. Weber, Ernst Heinr., Zusätze zur Lehre vom Baue n. den Verrichtungen der Geschlechtsorgane. Leipzig, 1846.

60. Wernher, A., Handbuch der allgemeinen u. speciellen Chirurgie. Giessen 1844-1846. 5-6th thlr.

61. Wunderlich, C. A., Handbuch der Pathologie u. Therapie. Stuttgart 1846. 1 1-8th thlr.

62. Zeis, Ed., der Assistent oder die Kunst bei chir. Operationem zu assistiren. Leipzig 1846. 1 1-3d thlr.

63. Zeune, Aug., Ueber Schädelbildung zur festen Begründung der Menschenrassen. Berlin 1846. ¼ thlr.

## BOOKS RECEIVED.

---

1. On the Nature and Causes of Abortion and Sterility. By James Whitehead, F.R.S.E. pp. 426.
2. Thoughts on Several Severe Diseases of the Human Body. By Dr. Seymour. pp. 260.
3. Observations on Surgical Practice. By John P. Vincent, F.R.C.S. pp. 364. (*In our next.*)
4. Essay on the Diseases of the Jaws. By Leonard Koecker. Translated by J. Mitchell, Dentist. pp. 94.
5. Researches into the Pathology and Treatment of Cholera. By E. A. Parkes, M.D. London: pp. 296. (*In our next.*)
6. Practical Observations on Diseases of the Chest. By Peyton Blakiston, M.D. pp. 354. (*In our next.*)
7. On Ringworm. By Erasmus Wilson, F.R.S. pp. 102. (*In our next.*)
8. On Poisons in Relation to Medical Jurisprudence and Medicine. By A. Taylor, F.R.S. pp. 854. (*In our next.*)
9. Manual of Elementary Medicine, Theoretical and Practical. By George Fownes, F.R.S. 2d. edit. pp. 596.
10. Pocket Formulary and Synopsis of British and Foreign Pharmacopœias. By Henry Beazley. 4th edit. pp. 454.
11. On Diseases of the Skin generally considered Intractable. By T. Hunt.
12. Practical Treatise on Spermatorrhœa. By M. Lallemand. Translated by H. McDougal. pp. 333.
13. Guide to the Chemical Examination of the Urine. By Alfred Markwick, Esq. pp. 155.
14. Treatise on Diet and Regimen. By Dr. Robertson. Vol. I. pp. 354.
6. Lectures on Electricity and Galvanism. By Dr. Golding Bird. (*Reprint.*)
7. Case of Enlargement of the Left Mamma. By W. E. Grange, Esq., F.R.C.S. (*Reprint.*)
8. On Auscultation in Labour. By Dr. M'Clintock. (*Reprint.*)
9. Case of Large Pouch in the Œsophagus. By W. C. Worthington, F.R.C.S. (*Reprint.*)
10. Introductory Lecture. By Dr. Budd.
11. Observations on Placenta Prævia. By Dr. Tyler. (*Reprint.*)
12. Report on the Pathology of Iliac Abscesses. By Dr. Battersby. (*Reprint.*)
13. Proceedings of the National Convention, New York.
14. New York Journal of Medicine. September.
15. On Scurvy. By Dr. Ritchie. (*Reprint.*)
16. On the Structural Relations of Oil and Albumen. By Dr. Hughes Bennett. (*Reprint.*)
17. History of the Application of Nitrous Oxide, Ether, &c., in Surgical Practice. By Horace Wells.
18. Some Account of the Letheon. By Dr. Warren.
19. On a New Anæsthetic Agent as a Substitute for Ether. By Dr. Simpson.
20. Proceedings of the Obstetrical Society of Edinburgh.

### IN EXCHANGE.

British and Foreign Medical Review. (July, Oct.)  
 Dublin Quarterly Journal of Medical Science. (Aug., Nov.)  
 American Journal of the Medical Sciences. (July, Oct.)  
 Monthly Journal of Medical Sciences. (July, Aug., Sept., Oct., Nov., Dec.)  
 British American Journal. From July.  
 Boston Medical and Surgical Journal. From July.  
 Philadelphia Medical Examiner. From July.  
 Medical Times. From July.  
 Pharmaceutical Medical Times. Chemist. From July.  
 Pharmaceutical Journal. (July, Aug., Sept., Oct., Nov.)

### PAMPHLETS.

1. Hassall's Microscopic Anatomy. Parts 9, 10, 11.
2. Some Remarks on the Value and Necessity of the Numerical Method in Surgery. By Dr. Simpson. (*Reprint.*)
3. Hall on the System of Ganglionic Nerves. Second Part.
4. Observations on Pleuritis and Empyema in Children. By Dr. Battersby. (*Reprint.*)
5. Account of a Case in which two Fœtuses were United at the Sternum. By R. W. West.

# INDEX TO VOL. VI.

	PAGE
Abdomen, compression of, in obstinate hiccough	62
Abdominal pulsation	56
Abortion, statistics of	255
causes of	256
prevention of	257
Abscess, in children, rare forms of	167
of the liver, treated by puncture	59
treated by seton	108
Absorption, intestinal	285
ADDISON, Dr. F., on the respiratory uses of fat in insects	283
AIKEN, Mr., on nitrate of silver in diarrhœa	60
Albuminuria, association of, with pregnancy	255
Alkalies, in acute rheumatism	65
AMMON, VON, on epicanthus	216
Ammonia, as a vesicant	308
Amputation, tibio-tarsal	109
at the carpo-metacarpal joint	111
Aneurism of the aorta, quinine in	56
of the bend of the elbow, cured by electro-puncture	203
treatment of, by compression	204
of the basilar artery	205
Antrum, removal of the superior maxilla, for disease of	99
Aorta, malformation of	46
quinine, in aneurism of	56
rigidity of the arch of	190
aneurism of	189
Aortic valves, disease of	188
Aortitis	ib.
Aphonia, galvanism in	45
Apoplexy, spinal	37
Apparatus for fracture of the thigh	116
Aqueous humour, deficiency of	235
ARAN, M., on dilatation and rupture of the coronary arteries	190
on the treatment of syphilis	210
Archetype of the vertebrate skeleton	275
Arsenic, in inveterate skin diseases	194
Arteries, new instrument for compression of	204
contractility of	280
coronary, dilatation and rupture of	190
Auscultation, obstetric	251
BARNES, Dr. (U. S.), on the rubefacient effects of potassa fusa	72
Mr. on the use of the plug in unavoidable uterine hemorrhage	261
BARTOLOME, Dr., on pericarditis	48
Basilar artery, cases of aneurism of	205
BEAU, M., on intercostal neuralgia and neuritis	39
BELLINGHAM, Dr., on scurvy	176



	PAGE
BELLINGHAM, Dr., on rigidity of the arch of the aorta - - -	190
case of tibio-tarsal amputation - - -	109
BENNETT, Dr. HUGHES, on the relations of oil and albumen - - -	287
BENNET, Dr. H., on ulceration of the os and cervix uteri in virgin females - - -	128
ditto, in aged females - - -	131
BERNARD, Mr., on suppuration of the joints after scarlatina - - -	126
M., on the salivary glands - - -	284
BIRD, Dr. GOLDING, on the therapeutical powers of electricity and galvanism - - -	73
Dr. FREDERICK, case of extirpation of both ovaries - - -	246
Births, influence of periods of the day upon - - -	146
BLASBERG, M., new operation for ectropion - - -	219
Blepharitis - - -	ib.
erysipelatosus - - -	220
Blepharoplasty - - -	219
Blistering tissue, new formula for - - -	307
Blisters, linear, in erysipelas - - -	26
albuminuria, from the use of - - -	194
Blood-letting, new rules for - - -	69
from the jugular vein in children's diseases - - -	269
BOLING, Dr. (U. S.), on a new physical sign of pneumonia - - -	42
Bones, syphilitic disease of - - -	103
nerves of - - -	291
BOTTOMLEY, Mr., on a new apparatus for fractures of the femur - - -	116
BOVILLAUD, M., case of malformation of the aorta - - -	46
BOVISSON, M., on deficiency of the aqueous humour - - -	235
Brain, simple acute inflammation of, in infants - - -	149
Bronchitis, strychnine in - - -	45
BUDD, Dr., on chronic ulcer of the stomach - - -	57
on the gastric irritation of phthisis - - -	59
BULLEY, Mr., on treacle as an external application in burns - - -	210
Burns, treatment of, by cold water - - -	117
BURROWS, Mr., on the treatment of fever, by cold water - - -	21
Calculus, urinary decomposition of, by galvanism - - -	107
nasal treatment of - - -	115
renal, inhalation of ether during the passage of - - -	207
Cancer, non-malignant, disease of the uterus mistaken for - - -	245
CASPER, Dr., on the influence of the period of the day upon births - - -	146
Cauliflower excrescences - - -	245
CAUNT, Mr., case of dislocation of the femur reduced under the influence of ether - - -	97
Cerebral disease in infancy, symptoms of - - -	158
Cervical vertebræ, dislocation of - - -	80
caries of - - -	92
Cervix uteri, ulceration of, in virgins - - -	128
in aged females - - -	131
a cause of dysmenorrhœa - - -	128
a cause of abortion - - -	256
treatment of, by potassa fusa - - -	137
CHASSAIGNAC, M., on ophthalmia neonatorum - - -	272
CHALICE, Mr., case of abdominal tumour mistaken for pregnancy - - -	140
CHARLTON, Dr., on the treatment of dropsy after scarlatina - - -	28
Chest, deformity of, in children - - -	274
CHEVERS, Dr. NORMAN, on the causes of cyanosis - - -	51
Chloroform, discovery of - - -	304
uses of, in surgery, midwifery, &c. - - -	347
instrument for inhaling - - -	ib.
Cholera, account of the progress of - - -	330

	PAGE
CHRISTISON, Dr., on scurvy - - - - -	173
CLARKE, Dr., on strychnine in bronchitis - - - - -	45
CLAY, Dr., on abscess of the liver - - - - -	59
Cod-liver oil in phthisis - - - - -	187
COLLES, Dr., on the treatment of urinary fistula - - - - -	120
Compression in the treatment of aneurism, new instrument for - - - - -	204
Concretions, intestinal - - - - -	192
Conjunctivitis - - - - -	222
granular - - - - -	227
Consciousness, temporary loss of - - - - -	35
COOK, Mr., on the treatment of nasal calculus - - - - -	115
CORFE, Mr., on temporary loss of consciousness - - - - -	35
on diagnosis in cerebral disease - - - - -	36
Cornea, congenital opacity of - - - - -	229
belladonna, in perforating ulcer of - - - - -	230
Cornea, opacities of - - - - -	231
transplantation of - - - - -	ib.
Corneitis, punctiform - - - - -	84
idiopathic - - - - -	229
Coronary arteries, dilatation and rupture of - - - - -	190
Corpuscles, osseous - - - - -	277
Coryza, treatment of - - - - -	46
COSTE, M., on the divisions of the yelk - - - - -	292
Craniotomy, turning a substitute for - - - - -	264
CRISP, Mr., on abdominal pulsation - - - - -	56
on the most common causes of intestinal obstruction - - - - -	60
notice of a work by, on diseases of the blood-vessels - - - - -	188
CROSSE, J. G., Esq., on inversion of the uterus - - - - -	146
Croup, inflammatory, diagnosis of - - - - -	164
application of nitrate of silver to the larynx, in - - - - -	272
CURRAN, Dr., on scurvy - - - - -	181
Cyanosis, causes of - - - - -	51
Cysts, treatment of, by iodine injections - - - - -	212
DARBY, Dr., on the treatment of abscess by seton - - - - -	108
DASHWOOD, Mr., case of pregnancy complicated with tumour - - - - -	254
Deafness, partial, treatment of - - - - -	102
DEBROT, M., on involuntary movements - - - - -	278
Deglutition, mechanism of - - - - -	285
DEHANE, Dr., on the sanitary condition of Wolverhampton - - - - -	321
Delirium tremens - - - - -	31
Delivery, singular case of - - - - -	128
DEPAUL, M., on obstetric asenilation - - - - -	211
Descendens noni, anatomical variation in - - - - -	291
DESCHAMPS, M., on the treatment of coryza - - - - -	46
DESMARRES, M., on punctiform corneitis - - - - -	84
on scleritis - - - - -	233
on iritis - - - - -	238
on classification of diseases of the eye - - - - -	214
on ptosis - - - - -	216
on entropium - - - - -	218
on conjunctivitis - - - - -	222
on opacity of the cornea - - - - -	231
on transplantation of ditto - - - - -	ib.
on staphyloma of the cornea - - - - -	232
DEVERGIE, M., on itch - - - - -	67
on the treatment of squamous diseases - - - - -	68
Diabetes, treatment of - - - - -	62, 63
pathology of - - - - -	192
Diarrhœa, nitrate of silver in - - - - -	60

	PAGE
DICKSON, Dr., case of bifid vagina	248
Dislocation of the sixth cervical vertebra	80
of the patella	93
of the femur reduced under the influence of ether	97
reduced by Kluge's method	110
of the humerus reduced after five weeks, by Jarvis's apparatus	98
of the femur, of old standing, without false joint	212
DONOVAN, Mr., on galvanism in urinary calculus	107
Drugs, adulteration of	305
DUNCAN, Dr., on the exanthematous nature of whooping-cough	272
Dysentery, Heberden's treatment of	62
Dysmenorrhœa, ulceration of the os and cervix, a cause of	128
EAGER, Mr., a case of aneurism of the basilar artery	205
Ectropium, operation for	219
EDWARDS, Mr., unusual injury of the knee	86
Dr., on ulceration of the os uteri, a cause of dysmenorrhœa	133
ELAM, Dr., on the treatment of diabetes	63
Electricity, therapeutic effects of	73
Electro-puncture, case of aneurism by	203
Empyema, paracentesis in	211
Ectropium	218
Epicanthus	216
Epilepsy, treatment of	34
Epsom salts, method of disguising the taste of	297
substitute for	75
Erysipelas, nitrate of silver in	23
treatment of, by linear blisters	26
separation of the scalp from	183
of the eyelids	220
ESCHRICH, Dr., on ophthalmia neonatorum	271
Etherization in surgery, cases illustrative of	96
in renal calculus	207
in mania	184
in tetanus	ib.
in hysteria	ib.
in midwifery	264
physiology of	288
Eye, report on diseases of	213
paracentesis of	237
Eyelids, tumours of	221
syphilitic disease of	ib.
scrofulous diseases	222
Fat, respiratory uses of, in insects	283
FAUVEL, M., on scurvy	182
Femur, signs of fracture of the neck of	76
fracture of, new apparatus for	116
dislocation of, on the dorsum illi reduced under the influence of	
ether	97
reduced by Kluge's method	110
without false joint	212
FERGUSSON, Mr., new method of applying ligatures to tumours	ib.
Fever, treatment of, by cold water	17
scarlet, dropsy after	27
treatment of	28
typhus, causes and treatment of	22
typhoid, mercurial treatment of	183
FIFE, Dr., on the pathology of whooping-cough	272
Fistula, urinary, treatment of	120



	PAGE
Fertation, extra-uterine - - - - -	251
Fracture of the cervix femoris, signs of - - - - -	76
of the nasal bones, fatal effects of - - - - -	79
of the femur, new apparatus for - - - - -	116
FRANCIS, Dr., case of aneurism of the basilar artery - - - - -	205
case of old dislocation of the femur - - - - -	212
FRIEDLEBEN, Dr., on the pneumonia of childhood - - - - -	166
Funis presentations - - - - -	145
Galvanism in aphonia - - - - -	45
therapeutical application of - - - - -	73
in vesical calculus - - - - -	107
in atony of the uterus - - - - -	144
in the treatment of varices - - - - -	201
GERDY, M., on the influence of gravity in surgical diseases - - - - -	80
GILL, Dr., on the treatment of fever by cold water - - - - -	17
Gout - - - - -	192
accompanied by albuminous urine - - - - -	64
Granular conjunctivitis - - - - -	227
GREEN, Dr., on follicular disease of the larynx - - - - -	186
on phthisis pulmonalis - - - - -	187
GRIFFIN, Dr., on the prevention of abortion - - - - -	257
GROS, M., on the nerves of bone - - - - -	291
Hair, development of - - - - -	293
HALLET, Mr., on subluxation of the humerus forward - - - - -	86
HAMILTON, Mr., on inoculation in syphilis - - - - -	211
HARGRAVE, Dr., on the operation for phymosis - - - - -	208
HARLESS, Dr., on muscular excitability - - - - -	279
HARRISON, Mr., on the ligamentum nuchæ of the elephant - - - - -	295
Heart, development of the - - - - -	281
Hernia, treatment of, by opium - - - - -	119, 206
Hiccough, compression of the abdomen in - - - - -	62
HIGGINBOTTOM, Mr., on the nitrate of silver in erysipelas - - - - -	23
Humerus, subluxation of, forwards and inwards - - - - -	86
dislocation of, of old standing, reduced by Jarvis's apparatus - - - - -	98
HUNT Mr., notice of a work by, on "Inveterate Skin Diseases" - - - - -	194
case of ovarian tumour - - - - -	246
HUTCHINSON, Mr., on the mechanism of respiration - - - - -	281
Hydrocephalus, chronic, treatment of - - - - -	164
Hydrocyanic acid, mode of determining the strength of - - - - -	300
Hydrophobia - - - - -	212
Hysteria, ether inhalation in - - - - -	184
Insanity, medical treatment of - - - - -	29, 183
ether inhalation in - - - - -	184
Iodine, mode of extracting from weak solutions - - - - -	206
injections, treatment of cysts by - - - - -	212
Iodide of iron, formula for - - - - -	297
lead, ditto - - - - -	ib.
Iris, hernia of, new method of reducing - - - - -	239
movements of - - - - -	291
Iritis - - - - -	238
Itch, observations on - - - - -	67
JACOB, Dr., on serofalous ophthalmia - - - - -	222
on the curability of opacities of the cornea - - - - -	231
Joints, suppuration of, after scarlatina - - - - -	126
JONES, Mr., on placenta prævia - - - - -	261
WHARTON, on prosis - - - - -	216

	PAGE
JONES, MR. WHARTON, on erysipelas of the eyelids - - -	221
on paracentesis of the eye - - -	237
Jugular vein, bleeding from, in children's diseases - - -	269
KEILLER, Dr., case of spontaneous evolution - - -	259
on fatal bleeding from the umbilical cord - - -	270
KENDAL, Mr., on the mode of determining the strength of hydrocyanic acid - - -	300
KERR, Dr., on death from hemorrhage after lithotomy - - -	208
KLUYSKENS, M., on the separation of the sacro-iliac symphysis - - -	77
Knee, unusual injury of - - -	86
KUSTENS, M., on the treatment of burns by cold water - - -	117
Labour, premature, on the induction of - - -	257
Lachrymal gland, removal of - - -	118
LANE, MR. BUTLER, on the treatment of strangulated hernia by opium - - -	119
LAPASSE on the respirability of oxygen - - -	283
Larynx, follicular disease of - - -	186
ossification of - - -	284
LAWRENCE, Mr., on nitrate of silver in ophthalmic affections - - -	241
LAYCOCK, Dr., on the sanitary state of villages - - -	322
LEE, Dr. ROBERT, on the nerves of the heart - - -	291
LEVER, Dr., on disorders of the nervous system associated with pregnancy - - -	254
LEVY, M., on measles in the adult - - -	183
Ligamentum nuchæ in the elephant - - -	295
Lithotomy, death from hemorrhage after - - -	208
Lithotrixy - - -	ib.
Liver, abscess of, treated by puncture - - -	59
morphology of - - -	285
LONSDALE, Mr., on lateral curvature of the spine - - -	89
Dr., on scurvy - - -	175
Lung, gangrene of, without fetor - - -	187
structure of - - -	282
lymphatics of - - -	284
Lupus, treatment of - - -	66
M'CCLINTOCK, Dr., on auscultation in labour - - -	252
MARKWICK Mr., notice of a work by, on the clinical examination of the urine - - -	194
MARTIN, Dr., on the treatment of panaris - - -	212
MATTEUCCI, Prof., on intestinal absorption - - -	99
Maxilla, operation for the removal of the superior - - -	99
Measles in the adult - - -	193
MEIGS, Dr., on true or inflammatory croup - - -	164
case of bifid vagina - - -	247
Membrana decidua, construction of - - -	292
Meningitis tubercular, diagnosis of - - -	160
treatment of - - -	162
cerebro-spinal, epidemic of - - -	184
Menorrhagia - - -	244
Menstruation, diseases of - - -	ib.
MERBACH, M., on dropsy of the scarlatina - - -	27
Metropolis, health of, in the year 1846-7 - - -	312
METTAUER, Dr., on laceration of the perineum - - -	142
MEYER, Prof., on the action of strychnine on the nervous system - - -	289
MILDNER, Dr., on scleroma in newborn children - - -	271
Monomania, cure of, by trephining - - -	125
Monstrosity, description of a - - -	267
Moxa, electric - - -	74
MULDER on the action of oxygen on the blood - - -	283
Muscle, irritability of, in paralysed limbs - - -	279
Muscles, contraction of - - -	ib.

	PAGE
Muscles, microscopy of - - - - -	280
of the choroid - - - - -	292
Muscular movements, involuntary - - - - -	278
excitability - - - - -	279
after death - - - - -	ib.
fibre, development of - - - - -	280
Nasal bones, fatal fracture of - - - - -	79
Nerves, functions of - - - - -	290
of the heart - - - - -	291
of bones - - - - -	ib.
contractile movements in - - - - -	ib.
Nervous system, influence of strychnine in - - - - -	289
ganglia, structure of - - - - -	290
Neuralgia and neuritis, intercostal - - - - -	39
NICHET, M., on incision of the neck of the uterus - - - - -	263
Nitrate of silver in ophthalmic affections - - - - -	241
action of, on the liquids and solids of the body - - - - -	306
and potash, preparation of pencils of - - - - -	307
Nutrition, physiology of - - - - -	286
Obstruction, intestinal, causes of - - - - -	60
Oesophagus, sacculated pouch in - - - - -	191
OESTERLEN, Von, on intestinal absorption - - - - -	285
Oil and albumen, relations of - - - - -	287
OLDHAM, Dr., on a rare case of midwifery - - - - -	258
Opium, treatment of hernia by - - - - -	119, 206
Ophthalmic affections, nitrate of silver in - - - - -	241
Ophthalmia neonatorum - - - - -	271
Optic thalami, functions of the - - - - -	289
Ovarian tumour - - - - -	246
Ovaries, extirpation of both - - - - -	ib.
OWEN, Prof., on the archetype of the vertebrate skeleton - - - - -	275
Oxygen, respirability of - - - - -	283
PAGET, Prof., on nutrition - - - - -	286
on development of hair - - - - -	293
Panaris, treatment of - - - - -	212
PANCOAST, Prof., on a new mode of operating in vesico-vaginal fistula - - - - -	265
Paracentesis thoracis for empyema - - - - -	211
Parochial settlement bill - - - - -	324
Patella, vertical dislocation of - - - - -	93
PAYEN, M., on vertical dislocation of the patella - - - - -	ib.
PAYNE, Dr., on the application of treacle to burns - - - - -	210
PEDDIE, Dr., on spinal apoplexy - - - - -	37
PEMBERTON, Mr., removal of the lachrymal gland by - - - - -	118
Pericarditis - - - - -	48
Perineum, laceration of - - - - -	142
Phthisis, treatment of the gastric irritation of - - - - -	59
cauterization of the larynx in - - - - -	187
cod-liver oil in - - - - -	ib.
Phymosis, operation for - - - - -	208
PIDDUCK, Dr., on the treatment of typhus fever - - - - -	22
Placenta, mortality to mother and child from evulsion of - - - - -	260
Placental presentation - - - - -	259
source of hemorrhage in - - - - -	ib.
mortality from - - - - -	260
treatment of - - - - -	261
general rules of treatment in - - - - -	262



	PAGE
Plouvier, M., on the treatment of epilepsy	34
Plug, uses of, in placenta prævia	261
Pneumonia, new physical sign of	42
treatment of	43
of childhood	166
Poli, M., on a new criterion for bloodletting	69
Porter, Dr., on the diagnosis of the mercurial sore	76
on syphilis of the bones	103, 211
Positions, influence of, in surgical diseases	80
Potassa fusa, on the rubefacient and counter-irritant effects of	72
in induration of the cervix uteri	137
Power, Dr., on amputation of the carpo-metacarpal articulation	111
Pregnancy, signs of	250
derived from inspection of the vulva	251
complicated with tumour	254
disorders of the nervous system associated with	ib.
associated with albuminuria	255
Prevost, M., on contraction of muscles	279
on the development of muscular fibre	280
on the development of the heart	281
Public health, report on, for 1846-7	310
Puerperal fever	265
mania	ib.
Purpura and scurvy, diagnosis of	26
Putegnat, M., on the treatment of lupus	66
Quekett, Mr., on the osseous corpuscle	277
Quinine in internal aneurisms	56
di-arsenite of	75
Quinoidine	301
Radford, Dr., on the source of hemorrhage in placenta prævia	260
on the mortality to mother and child under evulsion of the placenta	ib.
on galvanism in uterine hemorrhage	262
Rees, Dr., on the treatment of diabetes	62
on the pathology of ditto	193
Renaud, Dr., on cauliflower excrescence	245
Respiration, mechanism of	281
Rheumatism, acute, treatment of	65
alkalies in	ib.
morbid anatomy of	ib.
Rilliet, M., on simple acute inflammation of the brain in infants	149
Ritchie, Dr., on scurvy	178
Robertson, Dr., case of monomania by	125
Robinson, Dr., on the gastric secretion	285
on the contents of the fetal stomach	292
on the sanitary state of Newcastle-on-Tyne	318
Rogers, Mr., on fatal fracture of the nasal bones	79
Rossignol, M., on the structure of the lung	282
Roux, M., on the use of ether in midwifery	264
Saliva	285
Salivary calculus	212
glands	284
Sanitary legislation	325
Scammony, on the purgative action of	306
Scarlatina, dropsy after	28
Schrieff, Dr., on ophthalmia	289

	PAGE
SCHUHR, Dr., on the movements of the iris	291
Sciatica, treatment of	38
Scleroma in children	271
Sclerotica, diseases of	232
Scleritis, rheumatic	233
Serofulous ophthalmia	222
Scurvy	171
and purpura, diagnosis of	26
SECONDI, M., on a new reason for inducing premature labour	257
on ossification of the cartilages of the larynx	284
SERRES, M., on the mercurial treatment of fever	183
SEVETT, Dr., on paracentesis in empyema	211
SEYMOUR, Dr., on the treatment of sciatica	38
on diseases of the stomach	191
on gout	192
SHAPTER, Dr., on scurvy	171
SHEARMAN, Dr., on the treatment of pericarditis	50
on non-malignant diseases of the uterus simulating cancer	245
SIDSON, Mr., on the mechanism of respiration	282
SIEBOLD, Prof., on inhalation of ether in midwifery	264
Silver, nitrate of, in erysipelas	23
in obstinate diarrhœa	60
in follicular diseases of the larynx	186
SIMPSON, Prof., on the treatment of inflammatory induration of the cervix uteri	137
on a new anæsthetic agent as a substitute for ether	304
on a singular case of delivery through a distorted pelvis	138
on albuminuria in pregnancy	255
on turning as a substitute for craniotomy	264
SIMS, Dr., case of removal of the superior maxilla	99
Skeleton, archetype of the vertebrate	275
modification of in the human subject	ib.
laws affecting the individual parts of	277
Skin, clinical observations on squamous diseases of	68
cause of the dark colour of, in negroes	294
SMITH, DR. PROTHEROE, on ether in midwifery	265
SNOW, Dr., on ether in surgery	96, 198
SOLTAU, Dr., on delirium tremens	31
Sore, mercurial, diagnosis of	76
Sparkling synchysis	240
Spine, nature and causes of lateral curvature of	89
dislocations of	210
Spontaneous evolution	259
SPRY, Mr., on intestinal concretions	192
Statistics of midwifery	266
STEPHENS, Mr., on funis presentations	145
Sterility, causes of	249
Stethoscopic sign, new	185
STIFF, Mr., on scurvy	172
Stomach, chronic ulcer of	57
diseases of	191
Strychnine, in chronic bronchitis	45
influence of, on the nervous system	289
mode of extracting	301
new test for	ib.
Sulphate of magnesia, method of disguising the taste of	297
SYME, Mr., operations by	197
Symphysis, sacro-iliac, separation of	77

	PAGE
Syphilis, treatment of	210
inoculation in	211
of the bones	103, 211
TESSIER, M., on the treatment of pneumonia	43
Tetanus, ether in	184
Tincture of hops, improved method of preparing	300
TODD, Dr., on gout with albuminous urine	64
on muscular irritability in paralysed limbs	279
Towns, sanitary state of	314
Trachea, removal of a pebble from the	124
Tracheotomy, operation for removal of a pebble from the trachea	ib.
Treacle, as an external application to burns	210
Tumours, new instrument for the diagnosis of	77
abdominal, mistaken for pregnancy	140
new method of applying ligatures to	212
Turning, in placenta prævia	261
a substitute for craniotomy	264
TYLER, Dr., on placenta prævia	261
Typhus, treatment of	22
Umbilical cord, fetal hemorrhage from	270
Urinary fistula, treatment of	120
Urine, incontinence of, remedies for	209
Uterine hemorrhage, galvanism in	262
Uterus, galvanism in atony of	144
inversion of	146
successfully treated	149
non-malignant disease of, simulating cancer	245
tonic spasm of	258
inertia of, rare case	ib.
incision of the neck of, in difficult labours	263
rudimentary existence of, in the male	293
Vagina, bifid, cases of	247
VALLEZ, M., on nitrate of silver in purulent ophthalmia	242
Varices, treatment of, by electro-puncture	201
VELPEAU, M., on the signs of fracture of the cervix femoris	76
Vertebra, dislocation of the sixth cervical	80
superior cervical, caries of	92
Vesico-vaginal fistula	265
WAGNER, M., on the structure of ganglions	290
WARD, Dr. OGIER, on the pathology of whooping-cough	273
WARE, Dr., on ether inhalation during the passage of a renal calculus	207
Water, treatment of fever by	17
WATSON, Dr., on the sanitary state of Liverpool	317
WEBER, VON, on the contractility of arteries	280
on the functions of nerves	290
on the rudimentary state of the uterus in the male	293
WERTHEIM, VON, on histology	294
WEST, Dr., on the symptoms of cerebral disease in infancy	158
on the treatment of chronic hydrocephalus	164
Mr., description by, of a monstrosity	267
WHITEHEAD, Mr., notice of a work by	243
on the diseases of menstruation	244
on the causes of sterility	249
on the signs of pregnancy	250
on the statistics of abortion	255

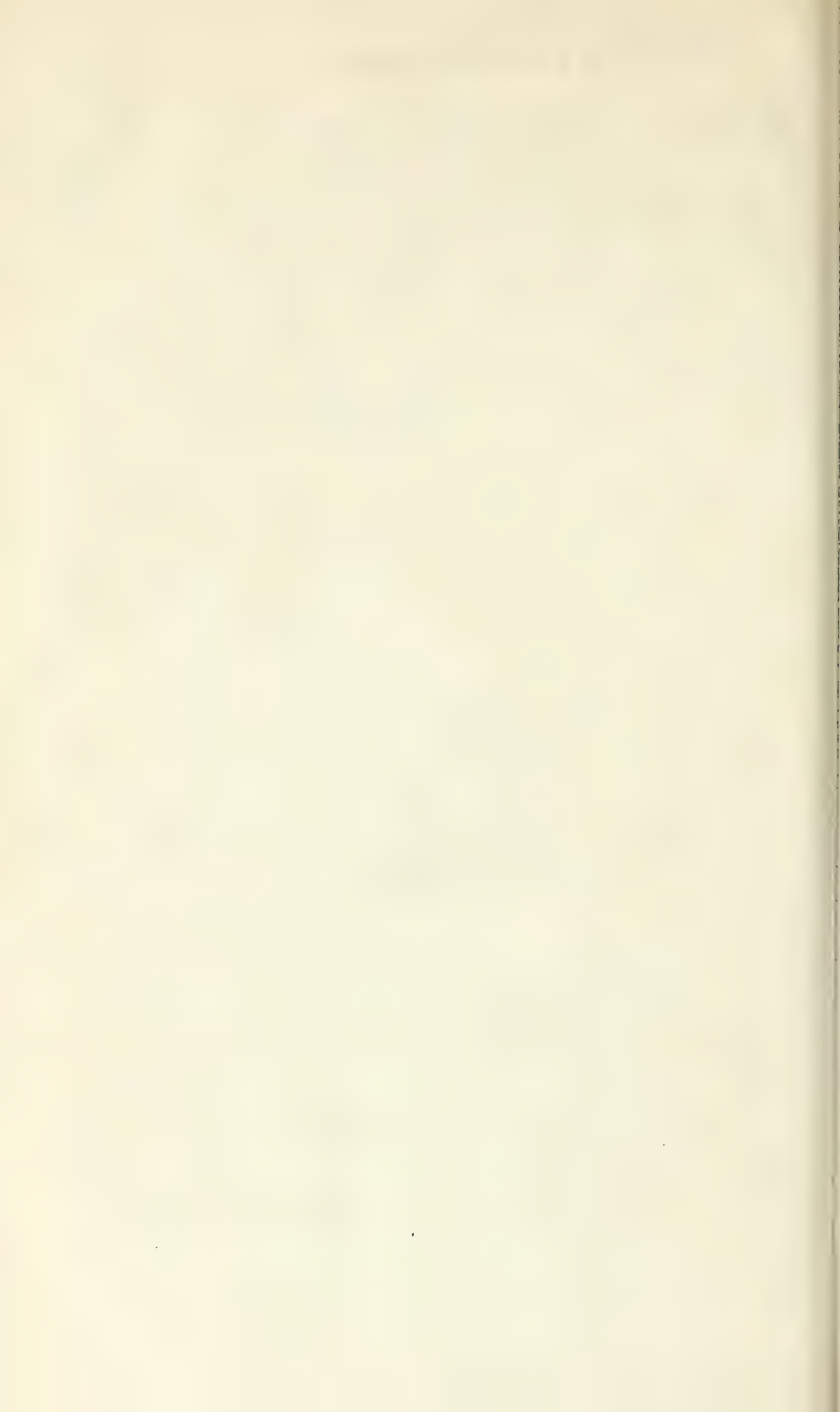


	PAGE
WHITEHEAD, Mr., on uterine congestion, inflammation, and ulceration as a cause of abortion - - - -	256
on syphilis as a cause of abortion - - - -	257
on ophthalmia neonatorum - - - -	271
WILD, Dr., on the mechanism of deglutition - - - -	285
WILDE, Mr., on entropium - - - -	218
WILSHIRE, Dr., on the diagnosis and treatment of tubercular meningitis -	160
WORTHINGTON, Mr., case of sacculated pouch of the œsophagus -	191
Yelk, division of the - - - -	292









THE MEDICAL PRACTITIONER'S  
AND  
STUDENT'S LIBRARY.

LINDSAY & BLAKISTON, PHILADELPHIA,  
**ARE PREPARING FOR PUBLICATION  
A NEW LIBRARY**

OF MEDICINE, SURGERY, AND THE COLLATERAL SCIENCES.  
**TO BE PUBLISHED IN A CHEAP FORM,**  
AT LESS THAN ONE HALF THE USUAL PRICE OF MEDICAL BOOKS!

**THE FIRST VOLUME, NOW READY,**  
CONTAINS  
**ELEMENTS OF THE  
PRINCIPLES AND PRACTICE OF MIDWIFERY.**

BY DAVID H. TUCKER, M. D.

Professor of the Principles and Practice of Medicine, and late Professor of Midwifery  
in the Franklin Medical College, Philadelphia.

WITH NUMEROUS ILLUSTRATIONS.

TO BE FOLLOWED IMMEDIATELY BY

Dr. STILLE'S Work on GENERAL PATHOLOGY,

Dr. MEIGS'S Work on the DISEASES OF CHILDREN.

Dr. SMITH'S GENERAL OR MICROSCOPIC ANATOMY,

to be succeeded by Other Volumes at intervals of about two months or sooner where practicable, allowing sufficient time for the proper execution of each work. This Library is intended to comprise works on all

**THE ELEMENTARY  
AND  
PRACTICAL BRANCHES OF MEDICINE!  
EACH VOLUME COMPLETE IN ITSELF!!**

AND SO ARRANGED AS TO PRESENT IN AN ACCESSIBLE SHAPE, A CONDENSED  
SUMMARY OF THE EXISTING STATE OF THE SCIENCE, ADAPTED  
TO THE WANTS OF ALL CLASSES OF MEDICAL MEN.

In thus starting an enterprise, new in its most important features, it is the intention of the Publishers to spare no expense in presenting the current PRACTICAL MEDICAL LITERATURE of the day, at the lowest possible price consistent with the proper execution of the works.

The Books announced below are now in course of preparation; each one by a gentleman fully competent to the undertaking, and who has made the subject one of especial study. The works on *Minor and Clinical Surgery*, *Special and General Anatomy*, *Physiology*, *Medical Chemistry*, *Materia Medica and Therapeutics*, and the *American Dissector*, will be amply

**ILLUSTRATED BY WELL-EXECUTED ENGRAVINGS,**  
made for the purpose. All will be well printed on fine paper, and with a clear and distinct type; each volume containing from 350 to 400 royal 12mo. pages.

## GENERAL PATHOLOGY.

BY ALFRED STILLE, M. D.

Lecturer on Pathology, and the Practice of Medicine, in the Philadelphia Medical Association, &c.

## DISEASES OF CHILDREN.

BY JOHN F. MEIGS, M. D.

Lecturer on Obstetrics and Diseases of Children, in the Philadelphia Medical Association.

## CLINICAL MEDICINE, OR INTERNAL PATHOLOGY AND THERAPEUTICS.

BY MEREDITH CLYMER, M. D.

Late Professor of the Principles and Practice of Medicine and Clinical Medicine in the Franklin Medical College, Philadelphia, &c.

## MINOR SURGERY.

BY EDWARD HARTSHORNE, M. D.

Lecturer on Legal Medicine in the Philadelphia Medical Association.

## GENERAL, OR MICROSCOPIC ANATOMY,

BY FRANCIS G. SMITH, M. D.

Lecturer on Physiology in the Philadelphia Medical Association.

## SPECIAL ANATOMY.

BY JOHN NEILL, M. D.

Lecturer on Anatomy, and Demonstrator in the University of Pennsylvania.

## PHYSIOLOGY.

BY FRANCIS G. SMITH, M. D.

Lecturer on Physiology in the Philadelphia Medical Association.

## MEDICAL CHEMISTRY.

BY ROBERT BRIDGES, M. D.

Professor of Chemistry in the Philadelphia College of Pharmacy, &c. &c.

## MATERIA MEDICA, AND THERAPEUTICS.

BY FRANCIS WEST, M. D.

Lecturer on Materia Medica and Therapeutics in the Philadelphia Medical Association.

## CLINICAL SURGERY.

BY EDWARD HARTSHORNE, M. D.

Lecturer on Legal Medicine in the Philadelphia Medical Association.

## THE AMERICAN DISSECTOR.

PREPARED ON A NEW PLAN

BY J. M. ALLEN, M. D.

Demonstrator of Anatomy, &c. &c.

The series of Books now announced, will form a convenient and cheap Library of reference for the Medical Practitioner, or a complete set of *Text Books for the Medical Student*. Other works on the collateral Branches of Medicine will be announced from time to time, as they present themselves.

## TERMS OF PUBLICATION.

Price for a Single volume, done up in a suitable form for mailing, \$1 25; or for five volumes, \$5; if paid for in advance. Persons at a distance can have the whole or any part of the series forwarded to them by *Mail*, at *Periodical Postage*, upon remitting the amount to the Publishers, or sample volumes upon the remittance of One Dollar.

LINDSAY & BLAKISTON, Publishers.

Northwest Corner of Fourth and Chestnut Streets, Philadelphia.



MENDENHALL'S MEDICAL STUDENT'S VADE MECUM.

The Second Edition, Revised and Greatly Enlarged.

LINDSAY AND BLAKISTON

PUBLISH

THE MEDICAL STUDENT'S VADE MECUM,

OR

MANUAL OF EXAMINATIONS

UPON

ANATOMY,  
PHYSIOLOGY,  
CHEMISTRY,  
SURGERY,  
MATERIA MEDICA AND  
PHARMACY,

PRACTICE OF MEDICINE,  
OBSTETRICS,  
DISEASES OF THE SKIN,  
AND POISONS.

**Second Edition, Revised and Greatly Enlarged,**

BY

GEORGE MENDENHALL, M. D.,

Lecturer on Physiology in the Medical Institute of Cincinnati, Member of the Philadelphia  
Medical Society, &c. &c.

A NEAT POCKET VOLUME.

*Extract from the Preface to the Second Edition.*

The favourable manner in which the first edition of this book has been received, and the rapidity with which it has been disposed of, render it necessary to issue a second edition; which has been revised and improved with great care, so as to bring it up to the present advanced state of the Science of Medicine. About one hundred and fifty pages of matter have been added that will be found to enhance its value materially; as some subjects entirely omitted in the previous edition have been supplied in the present; and others have been rendered more full.

The object is to furnish the Student of Medicine with a short and succinct view of the most important facts and principles which engage his attention during his pupilage, in order that he may refresh, and fix more firmly upon his memory what he has read and heard; as well as to enable him properly to arrange his knowledge so as to use it in the most advantageous manner.

# RANKING'S HALF-YEARLY ABSTRACT

OF THE

## MEDICAL SCIENCES.

No. 6, now ready, gives a complete account of the Uses of *Chloroform* with an Engraving of a cheap and efficient Inhaler.

### OPINIONS OF THE PRESS.

THE foregoing is the title of a Medical Periodical, than which we know of none more suitable for the country physician who desires to keep pace with the improvements in his profession, but whose time is too much occupied, or whose means are too limited, to enable him to read, or purchase the numerous Medical publications containing the discoveries and improvements, constantly occurring, both at home and abroad. To all such, "Ranking's Half-Yearly Abstract" would prove "a treasure of knowledge," as it contains all that is truly valuable, in a condensed form, of sixteen British, fifteen French, nine German, and seven American Medical Periodicals, served up, twice a year, in a closely printed volume of three hundred and sixty-four pages, at the astonishingly low price of a dollar and a half per annum.

But it is not to those alone whose leisure and means are limited, that the "Abstract" would prove a valuable acquisition. Its pages are a vast store-house of information, from which all—from the grave and venerable practitioner, to the young physician just entering on his sphere of usefulness—may profitably procure much that is truly interesting and instructive.—*South Western Medical Advocate*.

The character of "Ranking's Abstract" is familiar to all. It is intended to preserve, and present in a condensed form, all that is most valuable in the periodical and current medical literature of the day. The design is well conceived and ably carried out, and there is no other source within our knowledge whence such a variety and amount of choice matter can be obtained.

Messrs. Lindsay and Blakiston are entitled to all praise for the very prompt manner in which they issue each successive number, and for affording to the American physician—for the trifling expense of one dollar and a half a year,—such a desideratum in medical literature.—*St. Louis Medical and Surgical Journal*.

This deservedly popular work fully sustains its former reputation in this number. It is a full and interesting abstract of what is new in the different departments of our science.

As a work of reference it is exceedingly convenient and valuable on account of the admirable arrangements of its contents, and the clear and full accounts given of the many improvements and discoveries which are being made during each succeeding six months.—*Illinois and Indiana Medical and Surgical Journal*.

The present No. of this valuable periodical fully sustains the high character of its predecessors. The practitioner is here presented with almost every important fact connected with the current medical literature, and that, too, without the labour of wading through innumerable journals, and almost interminable details of cases. The low price at which it is published, should insure it a place in every medical library.—*Western Lancet*.

This is a most valuable periodical to every practitioner of Medicine. It comprises everything new and practical in a nut-shell as it were, in the whole circle of medical sciences. We recommend it in the strongest manner to our readers.—*Mobile Medical and Surgical Journal*.

We wish once more to call the attention of our readers to this most excellent and comprehensive epitome of the current medical science of the day. It presents in a cheap and condensed form the most valuable and practical results arrived at by the most learned men of the profession, and that, at so cheap a rate, as to be within the reach of every one. It can no longer be regarded as a luxury, but one of the necessities to the medical man, without which he is very certain to remain ignorant of many new remedies and modes of treatment, of which he cannot well be deprived.—*New York Journal of Medicine*.

A more valuable periodical is not published.—*Southern Journal of Medicine and Pharmacy*.

Terms \$1 50 per annum. 75 cents per number, or \$2 25 for the bound volumes, each containing one year of the work. Back numbers furnished.

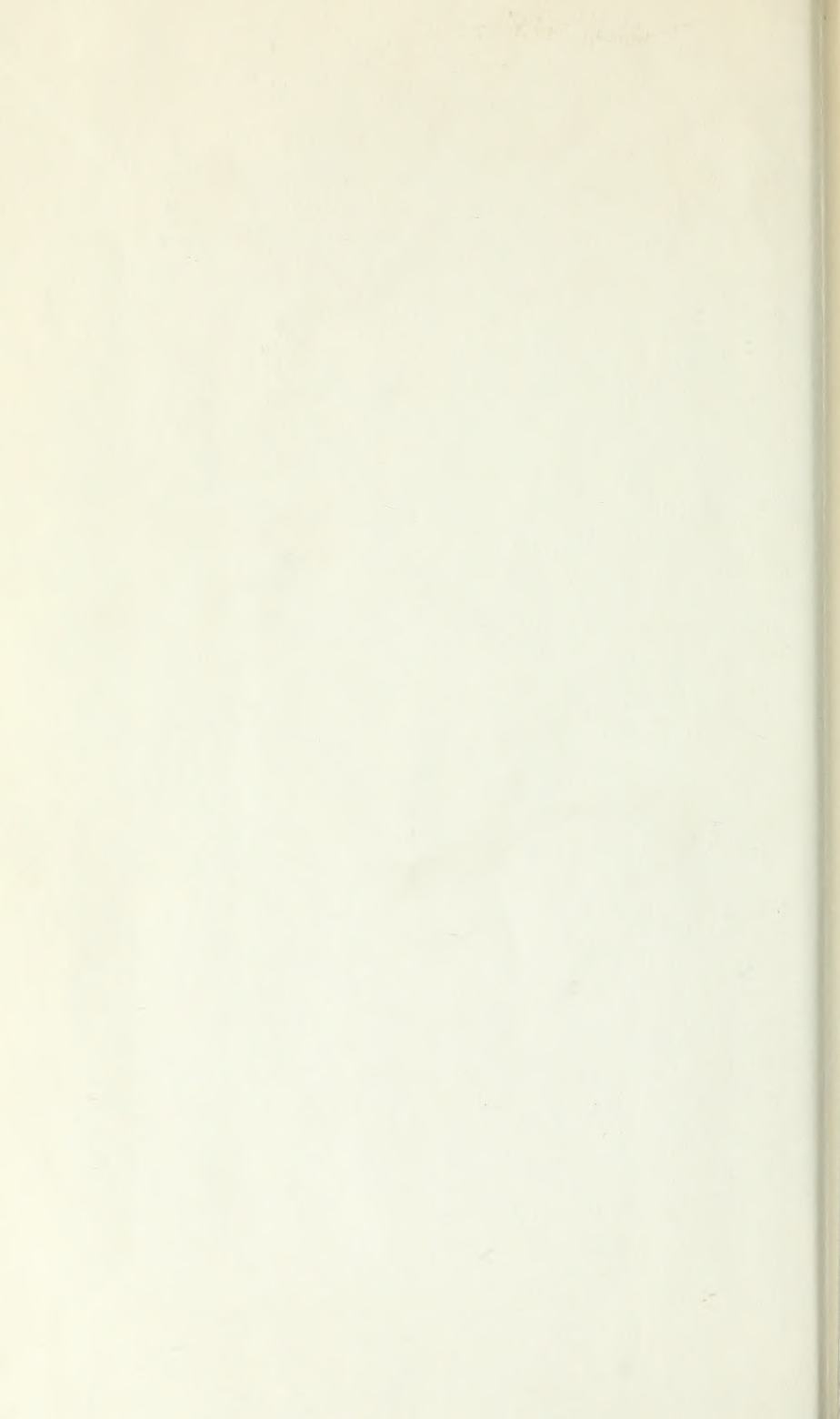
LINDSAY AND BLAKISTON, Publishers.  
Philadelphia.













P Half-yearly abstract of the  
Med medical sciences (Amer. ed)  
H  
v.5<sup>a</sup>6

Biological  
& Medical  
Serials

PLEASE DO NOT REMOVE  
CARDS OR SLIPS FROM THIS POCKET

---

UNIVERSITY OF TORONTO LIBRARY

---

STORAGE

